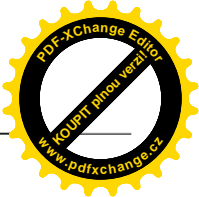


NABÍDKA číslo OV18501059



Obchodní firma: **Abacus Electric, s.r.o.**
 středisko Praha
 Cukrovarská 987
 Praha - 9 Čakovice
 196 00

IČ: 45022828 DIČ: CZ45022828
 Sídlo: Abacus Electric, s.r.o., č.p. 2, Planá, 370 01

Zákazníkově označení: **Server typ1**
 Objednáno: **Telefonem**
 Doprava: **PPL-ČR (z ČB) 24h**
 Datum vystavení: **7.5.2018**
 Vytvořil: **[redacted]**
 Fakturovat: **s DPH**
 Banka: **[redacted]**
 Účet: **[redacted]**

Odběratel: (5008911)
ČVUT v Praze , Fakulta informačních technologií
Thákurova 9
160 00 Praha 6
 IČ: 68407700 DIČ: CZ68407700
 Tel.: Fax:
 E-mail:

Kód Part number	Název produktu	Počet	Cena/MJ bez poplatků bez DPH	Měna	RP za ks	AP za mj	Cena/MJ s poplatky bez DPH	DPH %	Celkem
i-1420Q-X11 1U(W/O) 2S-P,2GbE,4sATA,2PCI-E8,1-E8LP,12DDR4,IPMI		2	170 331.80	Kč	3.36	0.00	170 335.16	21 %	412 211.09
	Intel Xeon Gold 6136 - 3,0GHz@10,40GT 24,75MB cache, 12core,HT, 150W, FCLGA3647, 2P/4P, tray								2
	X11DDW-NT 2S-P,W/O,PCI-E48(g3)+mezz.,2x10GbE-T, 14sATA3,M.2, 4NVMe, 12DDR4-3200,IPMI								1
	16GB 2666MHz DDR4 ECC Registered 2Rx4, LP(31mm), Samsung (M393A2G40EB2-CTD)								6
	Síťová karta Intel X540 Dual-port 10GbE 10GBase-T na základní desce								1
	Aspeed AST2500								1
	QLOGIC QLE2562-CK - dual port 8Gb FC HBA, PCI-E8 g2 LP, LC multi mode								1
	500GB WD5003ABYZ RE4 7200rpm, 4,2ms, sATA3, 64MB, 3,5", Raid Edition								2
	IPMI 2.0 modul s KVM-over-LAN na základní desce								1
	SC815TQC-R706WB2 1U (2x165W) 4sATA/SAS3,slimCD,FD,rPS 750W(80+PLATINUM), černé								1
	Redundantní zdroj								1
	Záruka 60 měsíců servisní zásah v místě NBD								1

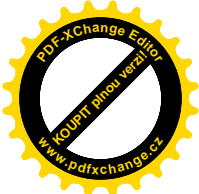
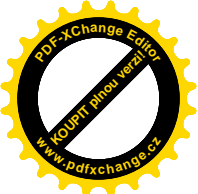
Z celkové sumy bez DPH byly odvedeny následující poplatky:

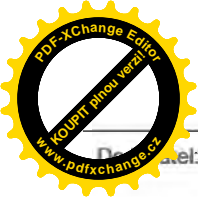
Recyklační poplatek (DPH 21%): 6.72 Kč
 Poplatky celkem: 6.72 Kč

Celková hodnota nabídky v Kč: 340 670.32
s DPH: 412 211.00

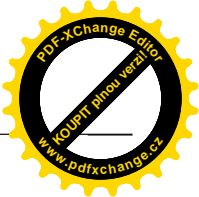
!!! Konkrétní konfigurace uvedená v této Nabídce je důvěrná neboť splňuje všechny znaky obchodního tajemství ve smyslu § 504 NOZ !!!

OR: Krajský soud v Českých Budějovicích, oddíl C, vložka 1228





NABÍDKA číslo OV18501062



Obchodní firma: Abacus Electric, s.r.o.
 středisko Praha
 Cukrovarská 987
 Praha - 9 Čakovice

IČ: 45022828 DIČ: CZ45022828
 Sídlo: Abacus Electric, s.r.o., č.p. 2, Planá, 370 01

196 00

Zákazníkově označení: Server typ2
 Objednáno: Telefonem
 Doprava: PPL-ČR (z ČB) 24h
 Datum vystavení: 7.5.2018
 Vytvořil: [redacted]
 Fakturovat: s DPH
 Banka: [redacted]
 Účet: [redacted]

Odběratel: (5008911)

ČVUT v Praze , Fakulta informačních technologií

Thákurova 9
 160 00 Praha 6

IČ: 68407700 DIČ: CZ68407700
 Tel.: Fax:
 E-mail:

Kód Part number	Název produktu	Počet	Cena/MJ bez poplatků bez DPH	Měna	RP za ks	AP za mj	Cena/MJ s poplatky bez DPH	DPH %	Celkem
--------------------	----------------	-------	------------------------------------	------	-------------	-------------	----------------------------------	-------	--------

i-T321T-X11 - GPU 4U/tower workstation 2P Xeon Scalable, 16DDR4, 4xGPU

2 266 048.12 Kč 3.36 0.00 266 051.48 21 % 643 844.58

Záruka 60 měsíců servisní zásah v místě NBD

1

Intel Xeon Gold 6136 - 3,0GHz@10,40GT 24,75MB cache, 12core,HT, 150W, FCLGA3647, 2P4P, tray

2

X11DPI-NT 2S-P,4PCI-E16,2-E8, 2x10GbE-T, 2NVMe(E4), M.2,12sATA3,16DDR4-3200,IPMI

1

8GB 2666MHz DDR4 ECC Registered 1Rx8, LP(31mm), Samsung (M393A1K43B81-CTD)

4

10x serialATA 3.0 6Gb/s RAID 0/1/5/10

1

nVidia Tesla Pascal P100 (3584CudaCores,12GB,PCI-E16g3,250W), pasivní chlazení, pouze pro výrobu

1

QLOGIC QLE2562-CK - dual port 8Gb FC HBA, PCI-E8 g2 LP, LC multi mode

1

Síťová karta Intel X550 Dual-port 10GbE 10GBase-T na zákl. desce

1

500GB WD5003ABYZ RE4 7200rpm, 4,2ms, sATA3, 64MB, 3,5", Raid Edition

2

Externí hotswap větrák za PCI GPU sloty pro SC745B/SC747B/SC835/SC836B/SC848/SC418 (držák + fan 8500oL) 7048GR-TR KIT

1

rackmount kit s výsuvnými kolejnicemi pro 4U SC742x/743x (černý)

1

SC745TQ-R800, 4U/tower eATX13,8sATA/SAS,3x5,25",rPS 800W,černé

1

Redundantní zdroj

1

SNK-P007OAPS4 Aktivní 4U heatsink pro LGA3647 (SocketP) úzký ILM

2

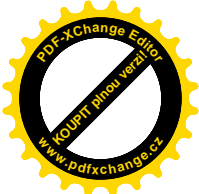
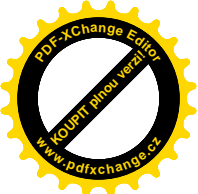
Z celkové sumy bez DPH byly odvedeny následující poplatky:

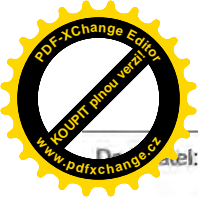
Celková hodnota nabídky v Kč: 532 102.96
 s DPH: 643 845.00

Recyklační poplatek (DPH 21%): 6.72 Kč
 Poplatky celkem: 6.72 Kč

!!! Konkrétní konfigurace uvedená v této Nabídce je důvěrná neboť splňuje všechny znaky obchodního tajemství ve smyslu § 504 NOZ !!!

OR: Krajský soud v Českých Budějovicích, oddíl C, vložka 1228





NABÍDKA číslo OV18501124



Dodavatel: **Abacus Electric, s.r.o.**
středisko Praha
Cukrovarská 987
Praha - 9 Čakovice

IČ: 45022828 DIČ: CZ45022828
Sídlo: Abacus Electric, s.r.o., č.p. 2, Planá, 370 01

196 00

Tel.: + [redacted]

Zákazníkově označení: **Switche**
Objednáno: **Telefonem**
Doprava: **PPL-ČR (z ČB) 24h**
Datum vystavení: **7.5.2018**
Vytvořil: [redacted]
Fakturovat: **s DPH**
Banka: [redacted]
Účet: [redacted]

Odběratel: (5008911)

ČVUT v Praze , Fakulta informačních technologií

Thákurova 9
160 00 Praha 6

IČ: 68407700 DIČ: CZ68407700
Tel.: Fax:
E-mail:

Kód Part number	Název produktu	Počet	Cena/MJ bez poplatků bez DPH	Měna	RP za ks	AP za mj	Cena/MJ s poplatky bez DPH	DPH %	Celkem
KAD KN1108VA KN1108VA	ATEN KN1108VA-AX-G 1-Local/1-Remote Access 8-Port Cat 5 KVM over IP Switch (1920 x 1200) <i>3.6.10. rozbočovač / přepínač hub a jiné</i>	1	23 500.00	Kč	0.00	0.00	23 500.00	21 %	28 435.00
KAD KA7169-AX KA7169-AX	ATEN DisplayPort USB Virtual Media KVM Adapter Cable with Smart Card Reader <i>3.6.10. rozbočovač / přepínač hub a jiné</i>	8	1 600.00	Kč	0.00	0.00	1 600.00	21 %	15 488.00
LAN LAX XS728T-100NE LAX XS728T-100NES	Netgear XS728T ProSAFE 10-Gigabit Ethernet Smart Switch, 24x 10GbE RJ45, 4x SFP+ <i>3.4.2.5. PC komponenty (příslušenství) - Externí příslušenství</i>	1	47 000.00	Kč	0.00	0.00	47 000.00	21 %	56 870.00
LPU PATCH 5 5 21.99.0505	UTP patch kabel Cat-5e, 5m	4	25.00	Kč	0.00	0.00	25.00	21 %	121.00
LPU PATCH 5 9 50	UTP patch kabel Cat-5e, 50m	4	210.00	Kč	0.00	0.00	210.00	21 %	1 016.40

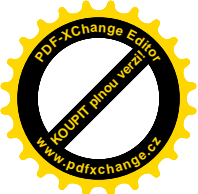
Z celkové sumy bez DPH byly odvedeny následující poplatky:

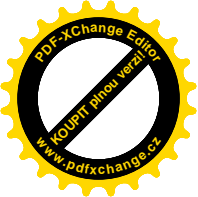
Poplatky celkem: 0.00 Kč

Celková hodnota nabídky v Kč: 84 240.00
s DPH: 101 930.00

!!! Konkrétní konfigurace uvedená v této Nabídce je důvěrná neboť splňuje všechny znaky obchodního tajemství ve smyslu § 504 NOZ !!!

OR: Krajský soud v Českých Budějovicích, oddíl C, vložka 1228





EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Výzkum, vývoj a vzdělávání



Příloha č. 2a Zadávací dokumentace

Čestné prohlášení

1. Název veřejné zakázky
<u>Serverová infrastruktura a Infrastruktura pro ukládání dat</u>
Část 1 – Serverová infrastruktura

2. Účastník zadávacího řízení	
Obchodní firma / Název:	Abacus Electric s.r.o.
Sídlo / místo podnikání:	Čp.2, 370 01 Planá
IČO:	45022828

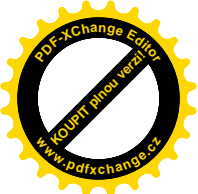
ÚZŘ čestně prohlašuje, že nemá v úmyslu zadat určitou část výše uvedené VZ jiné osobě, tj. poddodavateli.¹

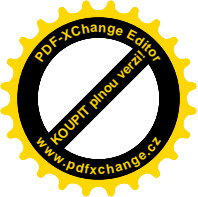
Datum a podpis: ..
(osoba/osoby zastupující ÚZŘ)



ABACUS
Abacus Electric, s.r.o.
Planá 2, 370 01, České Budějovice
IČ: 45022828 / DIČ: CZ45022828

¹ÚZŘ zvolí jednu z výše uvedených variant





PLNÁ MOC

Abacus Electric, s.r.o.
Planá 2
370 01 České Budějovice
IČO: 450 228 28

jednající jednatelem [REDACTED]
(dále jen „zmocnitel“)

tímto zmocňuje

[REDACTED]
[REDACTED]
[REDACTED]

(dále jen „zmocněnec“)

Zmocněnec je oprávněn po dobu neurčitou podávat nabídky na dodávku zboží a služeb a podepisovat smlouvy spojené s realizací těchto nabídek do výše plnění 5 000 000,-- Kč bez dph.

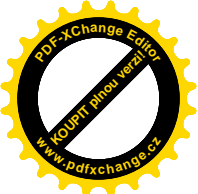
V Plané u Českých Budějovic dne 22.12.17

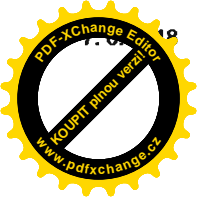
Plnou moc přijímám.

V Praze dne

8.5. 2018

[REDACTED]





Intel® Xeon® Gold 6136 Processor

24.75M Cache, 3.00 GHz

Specifications

[Export specifications](#)

Essentials

Product Collection	Intel® Xeon® Scalable Processors
Code Name	Products formerly Skylake
Vertical Segment	Server
Processor Number	6136
Status	Launched
Launch Date	Q3'17
Lithography	14 nm
Recommended Customer Price	\$2460.00

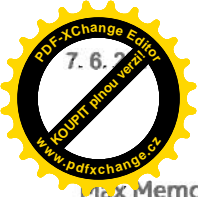
Performance

# of Cores	12
# of Threads	24
Processor Base Frequency	3.00 GHz
Max Turbo Frequency	3.70 GHz
Cache	24.75 MB L3
# of UPI Links	3
TDP	150 W

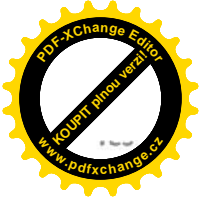
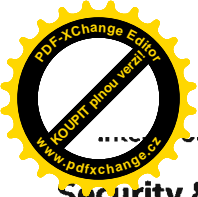
Supplemental Information

Embedded Options Available	No
Datasheet	View now
Product Brief	View now

Memory Specifications



Max Memory Size (dependent on memory type)	768 GB
Memory Types	DDR4-2666
Maximum Memory Speed	2666 MHz
Max # of Memory Channels	6
ECC Memory Supported ‡	Yes
Expansion Options	
Scalability	S4S
PCI Express Revision	3.0
Max # of PCI Express Lanes	48
Package Specifications	
Sockets Supported	FCLGA3647
T _{CASE}	85°C
Package Size	76.0mm x 56.5mm
Low Halogen Options Available	See MDDS
Advanced Technologies	
Intel® Optane™ Memory Supported ‡	No
Intel® Speed Shift Technology	Yes
Intel® Turbo Boost Max Technology 3.0 ‡	No
Intel® Turbo Boost Technology ‡	2.0
Intel® vPro™ Technology ‡	Yes
Intel® Hyper-Threading Technology ‡	Yes
Intel® Virtualization Technology (VT-x) ‡	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡	Yes
Intel® VT-x with Extended Page Tables (EPT) ‡	Yes
Intel® TSX-NI	Yes
Intel® 64 ‡	Yes
Instruction Set Extensions	Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512
# of AVX-512 FMA Units	2
Enhanced Intel SpeedStep® Technology	Yes
Intel® Volume Management Device (VMD)	Yes



Security & Reliability

Intel® AES New Instructions	Yes
Intel® Trusted Execution Technology ‡	Yes
Execute Disable Bit ‡	Yes
Intel® Run Sure Technology	Yes
Mode-based Execute Control (MBE)	Yes

Compatible Products

Ordering and Compliance

Downloads and Software

All information provided is subject to change at any time, without notice. Intel may make changes to manufacturing life cycle, specifications, and product descriptions at any time, without notice. The information herein is provided "as-is" and Intel does not make any representations or warranties whatsoever regarding accuracy of the information, nor on the product features, availability, functionality, or compatibility of the products listed. Please contact system vendor for more information on specific products or systems.

Intel classifications are for informational purposes only and consist of Export Control Classification Numbers (ECCN) and Harmonized Tariff Schedule (HTS) numbers. Any use made of Intel classifications are without recourse to Intel and shall not be construed as a representation or warranty regarding the proper ECCN or HTS. Your company as an importer and/or exporter is responsible for determining the correct classification of your transaction.

Refer to Datasheet for formal definitions of product properties and features.

"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

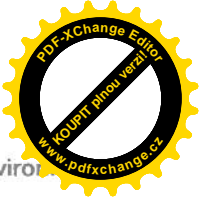
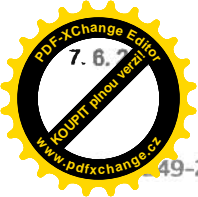
See <http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading> for more information including details on which processors support Intel® HT Technology.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

The Recommended Customer Price ("RCP") is pricing guidance for Intel products. Prices are for direct Intel customers, typically represent 1,000-unit purchase quantities, and are subject to change without notice. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply. If sold in bulk, price represents individual unit. Listing of these RCP does not constitute a formal pricing offer from Intel. Please work with your appropriate Intel representative to obtain a formal price quotation.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet

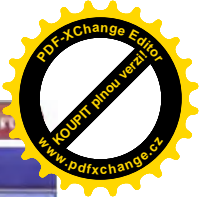


49-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

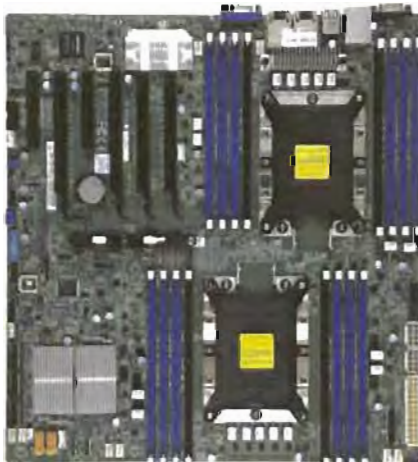
For benchmarking data see <http://www.intel.com/performance>.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See <http://www.intel.com/content/www/us/en/processors/processor-numbers.html> for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.



Home > Products > Motherboards > [X11DPI-NT]



Dual 10GbE

Key Features

1. Intel® Xeon® Scalable Processors, Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2 UPI up to 10.4 GT/s, CPU1: Skylake-F CPU supported
2. Intel® C622
3. Up to 2TB 3DS ECC RDIMM and DDR4-2666MHz, Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots
4. 4 PCI-E 3.0 x16, 2 PCI-E 3.0 x8
M.2 Interface: PCI-E 3.0 x4
M.2 Form Factor: 2260, 2280, 22110,
 2 PCI-E 3.0 NVMeExpress x4 Internal Port(s)
5. 1 VGA port
6. Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10
7. Dual LAN with 10GBase-T with Intel® X722 + X557

Links & Resources

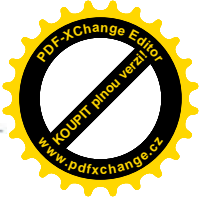
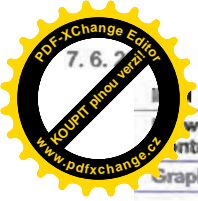
- ▶ [Tested Memory List](#)
- ▶ [Tested HDD / SSD List](#)
- ▶ [Tested M.2 List](#)
- ▶ [Tested AOC List](#)
- ▶ [Motherboard Manual](#)
- ▶ [Quick Reference Guide](#)
- ▶ [Update Your BIOS](#)
- ▶ [BMC/IPMI Firmware](#)
- ▶ [Download the Latest Drivers and Utilities](#)
- ▶ [Download Drivers CD](#)
- ▶ [OS Compatibility](#)



Specifications

Product SKU	MBD-X11DPI-NT	X11DPI-NT
Physical Stats	Form Factor	E-ATX
	Dimensions	12" x 13" (30.48cm x 33.02cm)
CPU	<ul style="list-style-type: none"> • Intel® Xeon® Scalable Processors, Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2 UPI up to 10.4 GT/s • CPU1: Skylake-F CPU supported 	
Cores / Cache	<ul style="list-style-type: none"> • Up to 28 cores 	
System Memory	<ul style="list-style-type: none"> • Up to 2TB 3DS ECC RDIMM and DDR4-2666MHz, Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots 	
Memory Capacity	<ul style="list-style-type: none"> • 2666/2400/2133MHz ECC DDR4 RDIMM, LRDIMM 	
Memory Type	<ul style="list-style-type: none"> • RDIMM: 64GB • LRDIMM: 64GB • 3DS LRDIMM: 128GB 	
DIMM Sizes	<ul style="list-style-type: none"> • RDIMM: 64GB • LRDIMM: 64GB • 3DS LRDIMM: 128GB 	
Memory Voltage	<ul style="list-style-type: none"> • 1.2V 	
Error Detection	<ul style="list-style-type: none"> • Corrects single-bit errors • Detects double-bit errors (using ECC memory) 	
Chipset	Intel® C622	
SATA	<ul style="list-style-type: none"> • Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10 	

Expansion Slots	<ul style="list-style-type: none"> • 4 PCI-E 3.0 x16, • 2 PCI-E 3.0 x8
M.2	<ul style="list-style-type: none"> • M.2 Interface: PCI-E 3.0 x4 • Form Factor: 2260, 2280, 22110
System BIOS	<ul style="list-style-type: none"> • BIOS Type: AMI UEFI
Management	<ul style="list-style-type: none"> • Software: Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog
PC Health Monitoring	<ul style="list-style-type: none"> • Voltage: +1.8V, +12V, +3.3V, +5V, +5V standby • FAN: 8x 4-pin fan headers (up to 8 fans), Pulse Width Modulated (PWM) fan connectors, PWM fan speed control • Temperature: N/A • LED: N/A • Other Features: Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS
Operating Environment	<ul style="list-style-type: none"> • Operating Temperature Range: 0°C ~ 50°C (32°F ~ 122°F) • Non-Operating Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) • Operating Relative: 10% ~ 85% (non-condensing)



Work Controllers	<ul style="list-style-type: none"> ASPEED AST2500 Dual LAN with 10GBase-T with Intel® X722 + X557
Graphics	<ul style="list-style-type: none"> Aspeed AST2500 BMC
Input	
Output	
SATA	<ul style="list-style-type: none"> 14 SATA3 (6Gbps) port
LAN	<ul style="list-style-type: none"> RJ45 Shared IPMI LAN port
USB	<ul style="list-style-type: none"> 4 USB 2.0 ports (2 rear + 2 headers). 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)
Video Output	<ul style="list-style-type: none"> 1 VGA port
Serial Port / Header	<ul style="list-style-type: none"> 2 COM Ports (1 rear, 1 header)
TPM	<ul style="list-style-type: none"> 1 TPM Header

Humidity Range	
Non-Operating Relative Humidity Range	<ul style="list-style-type: none"> 10% ~ 95% (non-condensing)

Note: For optimized or compatible chassis, additional parts may be required, please check with Supermicro sales rep

Parts List

Parts List (Bulk Package)

Name	Part Number	Qty	Description
Motherboard	MBD-X11DPI-NT	1	X11DPI-NT Motherboard
CBL-0044L	CBL-0044L	2	SATA CABLE 61CM FLAT
MCP-260-00042-0N	MCP-260-00042-0N	1	

Parts List (Retail Package)

Name	Part Number	Qty	Description
Motherboard	MBD-X11DPI-NT	1	X11DPI-NT Motherboard
MNL-1773-QRG	MNL-1773-QRG	1	
CBL-0476L	CBL-0476L	1	
CBL-0044L	CBL-0044L	2	
MCP-260-00042-0N	MCP-260-00042-0N	1	

Chassis (Optimized for X11DPI-NT)

1U	2U	3U	Mid/Mini-Tower	Tall Tower
	<ul style="list-style-type: none"> 213AC-R1K23LPB 825TQC-R1K03LPB 			<ul style="list-style-type: none"> SC745BAC-R1K28B2 SC842TQC-865B

● = Most optimized Chassis for SuperServer Configuration
 Blue color = Compatible
 Green color = Global SKU & Compatible
 Red dot & green color = Optimized + Global SKU

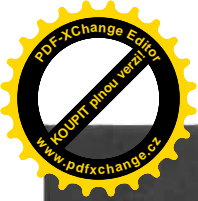
Server (Optimized for X11DPI-NT)

Server Name
SYS-6029P-TRT
SYS-7049P-TRT
SYS-2029P-C1RT

Relations 1
 SuperBlade®

Supplies

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NVIDIA TESLA P100 GPU ACCELERATOR

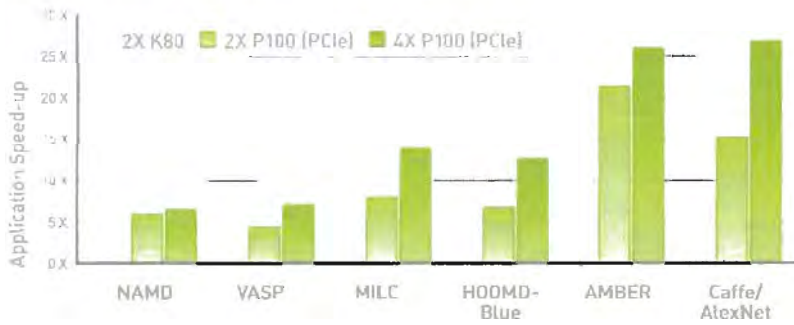
World's most advanced data center accelerator for PCIe-based servers

HPC data centers need to support the ever-growing demands of scientists and researchers while staying within a tight budget. The old approach of deploying lots of commodity compute nodes requires huge interconnect overhead that substantially increases costs without proportionally increasing performance.

NVIDIA Tesla P100 GPU accelerators are the most advanced ever built, powered by the breakthrough NVIDIA Pascal™ architecture and designed to boost throughput and save money for HPC and hyperscale data centers. The newest addition to this family, Tesla P100 for PCIe enables a single node to replace half a rack of commodity CPU nodes by delivering lightning-fast performance in a broad range of HPC applications.

MASSIVE LEAP IN PERFORMANCE

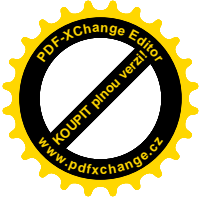
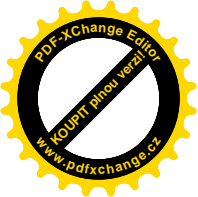
NVIDIA Tesla P100 for PCIe Performance



SPECIFICATIONS

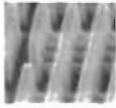
GPU Architecture	NVIDIA Pascal
NVIDIA CUDA® Cores	3584
Double-Precision Performance	4.7 TeraFLOPS
Single-Precision Performance	9.3 TeraFLOPS
Half-Precision Performance	18.7 TeraFLOPS
GPU Memory	16GB CoWoS HBM2 at 732 GB/s or 12GB CoWoS HBM2 at 549 GB/s
System Interface	PCIe Gen3
Max Power Consumption	250 W
ECC	Yes
Thermal Solution	Passive
Form Factor	PCIe Full Height/Length
Compute APIs	CUDA, DirectCompute, OpenCL™, OpenACC

TeraFLOPS measurements with NVIDIA GPU Boost™ technology

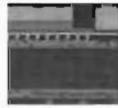


A GIANT LEAP IN PERFORMANCE

Tesla P100 for PCIe is reimagined from silicon to software, crafted with innovation at every level. Each groundbreaking technology delivers a dramatic jump in performance to substantially boost the data center throughput.



PASCAL ARCHITECTURE
More than 18.7 TeraFLOPS of FP16, 4.7 TeraFLOPS of double-precision, and 9.3 TeraFLOPS of single-precision performance powers new possibilities in deep learning and HPC workloads.

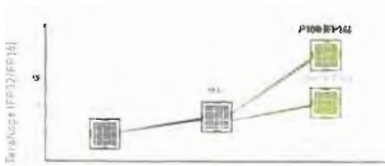


COWOS HBM2
Compute and data are integrated on the same package using Chip-on-Wafer-on-Substrate with HBM2 technology for 3X memory performance over the previous-generation architecture.



PAGE MIGRATION ENGINE
Simpler programming and computing performance tuning means that applications can now scale beyond the GPU's physical memory size to virtually limitless levels.

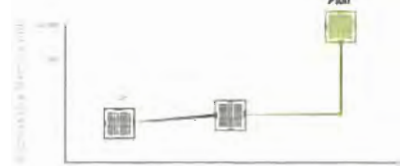
Exponential HPC and hyperscale performance



3X memory boost



Virtually limitless memory scalability



To learn more about the Tesla P100 for PCIe visit www.nvidia.com/tesla

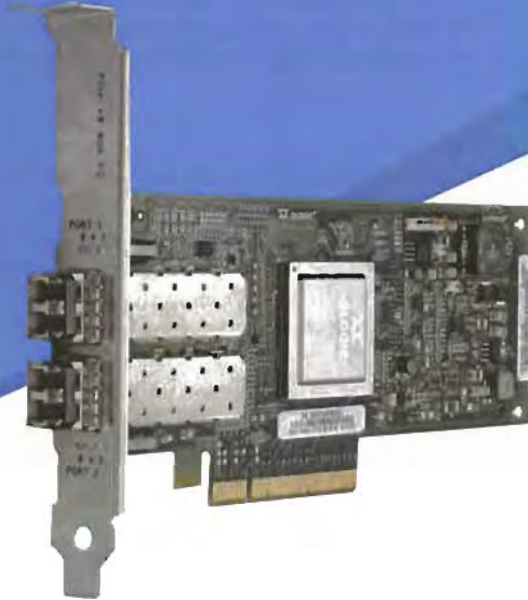
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2500 Series

8Gb-to-PCIe Fibre Channel Adapters



- Fibre Channel 8Gb-to-PCIe
- 1,600MBps (full-duplex) per port
- Up to 200,000 initiator and target IOPS per port
- StarPower™ technology
- Virtualization optimized
- Power optimized
- RAS optimized
- Security and management optimized

OVERVIEW

QLogic® 2500 Series Adapters are designed to meet the business requirements of the enterprise data center through the lowest possible power consumption and the highest level of performance. These adapters interface to the host server with a PCI Express® (PCIe®) 2.0 bus, ensuring no internal performance bottlenecks.

The 2500 Series 8Gb Adapters are the highest performing adapters in QLogic's industry-leading Fibre Channel technology portfolio. Choosing QLogic 8Gb adapters will not only meet today's demanding data center requirements by providing power and virtualization optimization, but investment protection is built in through backward compatibility with previous generations' (4Gb and 2Gb) technology. In addition, 2500 Series Adapters work in both PCIe Gen1 and 2.0 host bus interface platforms. QLogic's unique Dynamic Power Management technology enables the 2500 Series Adapters to provide the lowest possible power consumption. The 2500 Series Adapters are also backed by an industry-leading five-year (no charge) limited warranty; for details, visit:

<http://www.qlogic.com/Support/Pages/Warranty.aspx>

VIRTUALIZATION OPTIMIZED

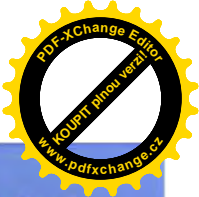
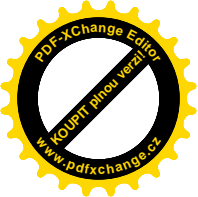
The 2500 Series Adapters deliver enhanced security and quality of service (QoS), and they enable dynamic provisioning. 2500 Series Adapters also allow multiple logical (virtual) connections to share the same physical port. Each logical connection has its own resources and the ability to be managed independently.

POWER OPTIMIZED

The 2500 Series Adapters take advantage of QLogic StarPower technology, ensuring power efficiency. QLogic StarPower technology offers dynamic and adaptive power management features such as power and bandwidth optimized intelligent PCIe link training, low-power switching power supplies, and a thermally efficient layout requiring lower airflows.

RELIABILITY, AVAILABILITY, SERVICEABILITY (RAS) OPTIMIZED

The 2500 Series Adapters provide the highest data integrity by ensuring overlapping protection domains (OPDs) on both the control and data paths. In addition, 2500 Series Adapters use enhanced hardware assist firmware tracing (EHAFT), allowing more comprehensive debugging with standard drivers.



2500 Series

Data Sheet

SECURITY OPTIMIZED

The 2500 Series Adapters support SAN-level authentication (FC-SP) fabric-level isolation (NPM), and end-to-end data integrity (T10).

MANAGEMENT OPTIMIZED

The 2500 Series Adapters are backward compatible with 4Gb and 2Gb speeds. A single common driver per OS for three generations of Fibre Channel adapters (8Gb, 4Gb, and 2Gb) simplifies deployment. QLogic's unified driver model (firmware embedded in the driver) eliminates potential interoperability issues between firmware and driver versions. The 2500 Series Adapters' API compatibility with 4Gb products accelerates deployment while ensuring application compatibility.

SIMPLIFIED SETUP

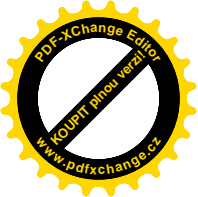
Point-and-click installation and configuration wizards simplify the adapter setup process. Storage administrators can quickly deploy adapters across a SAN using standard adapter management tools and device utilities. The 2500 Series Adapters are also fully compatible with industry-standard APIs—including the SNIA HBA API and SMI-S—that allow administrators to manage QLogic adapters using third-party software applications.

COMPREHENSIVE OS SUPPORT

QLogic offers the broadest range of support for all major OSs to ensure OS and hardware server compatibility. Drivers are fully tested and available for Windows®, Linux®, Solaris®, and VMware® ESX®. A single driver strategy per OS allows storage administrators to easily deploy and manage adapters in heterogeneous SAN configurations. QLogic's driver suite supports all major hardware server platforms, including 32- and 64-bit computing platforms from Intel® (IA32, IA64, and EM64T) and AMD® (Opteron™ 64).

INVESTMENT PROTECTION

For over 20 years, QLogic has been a technological leader with products that address the current needs of customers, yet provide strong investment protection to support emerging technologies and standards. QLogic stands alone in the industry with its product portfolio depth and experience in successfully delivering technological solutions that address the needs of today and tomorrow.



QLOGIC ADAPTERS AT WORK—RELATED VIDEOS

Click the video links below to see why QLogic adapters are the best choice for your SAN.



QLogic Adapter of Choice for Database Performance



QLogic Adapter of Choice for Fibre Channel SAN



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SuperChassis 745TQ-R800B

Home > Products > Chassis > 4U > [SC745TQ-R800B]



[Chassis Manual](#)

Key Features

1. 8x 3.5" SAS/SATA Backplane for Hot-Swappable Drives
2. Front HDD Door Lock & Side Panel Intrusion Switch
3. Front I/O Ports: 2x USB 2.0
4. 3x 8cm (5000 rpm) Middle PWM Fans & 2x 8cm (5000 rpm) Rear PWM Fans
5. 4U / Full Tower Chassis Supports max. Motherboard, Sizes - E-ATX 13.68" x 13"/ATX/Micro ATX
6. 800W Redundant High-Efficiency Power Supply
7. 3x 5.25" External HDD Drive Bays & 8x 3.5" Hot-Swappable HDD Drives

Specifications

Product SKUs

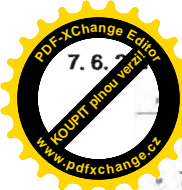
CSE-745TQ-R800B	• SuperChassis 745TQ-R800B
Form Factor	
• 4U chassis - supports for maximum motherboard sizes: E-ATX 13.68" x 13"	
Processor Support	
• Single and Dual Intel® and AMD processors	
Height	• 17.8" (452 mm)
Width	• 7" (178 mm)
Depth	• 25.5" (647 mm)
Net Weight	• 55 lbs (24.95 kg)
Gross Weight	• 58 lbs (26.31 kg)
Packaging (W x H x L)	• 24.6" (625 mm) x 14" (356 mm) x 31.3" (795 mm)
Available Color	• Black
• 7 full-height & full-length expansion slot(s)	

Motherboards for CSE-745TQ-R800B

X9DRH-7F	X9DRH-7TF
X9DRH-IF	X9DRH-ITF
X8DTN+	X8DTN+LR
X8DTH-6	X8DTH-6F
X8DTH-i	X8DTH-IF
X8DT6	X8DT6-F
X8DTE	X8DTE-F
X8DT3	X8DT3-F
X8DTi	X8DTi-F
X8DTi-LN4F	X8DT3-LN4F
X8DTL-3	X8DTL-3F
X8DTL-i	X8DTL-IF
X8DTL-6	X8DTL-6F
X8DTL-6L	X8DTL-L
X8DA6	X8DAE
X8DA3	X8DAi
X8DAL-3	X8DAL-i
X8SIL	X8SIL-F
X8SIE	X8SIE-F
C7B75	X10SAE
X10SAT	X9DRH-IF-NV

Servers (for CSE-745TQ-R800B)

Fans	<ul style="list-style-type: none"> • 3 x 8cm hot-swap redundant PWM cooling fan(s) • Optional 2 x • 2 x 8cm hot-swap exhaust fan(s) & air shroud
-------------	---



x 3.5" hot-swap SAS/SATA drive bay with SGPIO	
743 SAS BACKPLANE W/AMI MG9072	
Peripheral Drives	
<ul style="list-style-type: none"> 2 x USB 2.0 ports 3 x standard 5.25" drive bay 	
Front Panel	
Buttons	<ul style="list-style-type: none"> Power On/Off button System Reset Button
LEDs	<ul style="list-style-type: none"> 2 Network Activity LEDs Fan Fail/System Over Heat LED HDD activity LED Power Status LED
Ports	<ul style="list-style-type: none"> 2x USB 2.0 Port(s)

Operating Environment (System)	
Operating Temperature Range	• 5°C - 35°C (41°F - 95°F)
Non-Operating Temperature Range	• -40°C - 70°C (-40°F - 158°F)
Operating Relative Humidity Range	• 8% - 80% (non-condensing)
Non-Operating Relative Humidity Range	• 5% - 95% (non-condensing)
Power Supply	
1U 800W hot swap redundant power supply.	
Power Efficiency	• 89%
Total Output Power and Input	• 800W with Input 100 - 240Vac
AC Input Frequency	• 50-60Hz
Dimensions (L x W x H)	• 336 x 76 x 40 mm
Output Type	• Backplanes (gold finger)
+12V	• Max: 66A / Min: 0.5A (100Vac - 240Vac)
+5Vsb	• Max: 4A / Min: 0A
Power Distributor	• PDB-PT745-8824

Regulatory (Power Supply)	
Power Supply Safety / EMC	<ul style="list-style-type: none"> BSMI CCC CE/EMC FCC class A TUV/CB UL/CUL

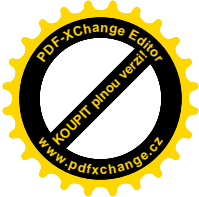
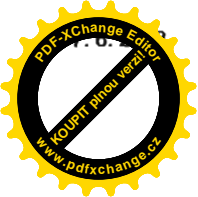
Components

Standard Parts

	Part Number	Qty	Description
Air Shroud	MCP-310-49001-0N	1	SC745 Intel DP X9, X8 PC air shroud 1368x13/12x13MB
HD Backplane	CSE-SAS-743TQ	1	743 SAS BACKPLANE W/AMI MG9072
Cable(S)	CBL-0044L	4	SATA,INT,FLAT,57.7CM,26AWG
Cable(S)	CBL-0087	1	CBL,FRONT CNTL, 16 TO 16 PIN,Ribbon,50CM
Cable(S)	CBL-0157L	1	CBL,SGPIO,2X4F TO 2X4F,P2.54,RIBBON IN RND TUBE,40CM,28AWG
Cable(S)	CBL-0160L	2	NEMA5-15P to C13 US power cord 16AWG 6ft, PBF (default for high watt)
Cable(S)	CBL-0216L	3	4 PIN TO 4 PIN MIDDLE FAN POWER EXTENSION. 20cm. 24AWG(PWM)
Fan(s)	FAN-0074L4	3	80X38MM 4-PIN PWM (MIDDLE) FAN W/HUS FOR SC743
Fan(s)	FAN-0082L4	2	80x80x38 mm 4-pin PWM Fan Assembly for SC743, SC745
Drive Tray(s)	MCP-220-00092-0B	8	Black Hot-swap 3.5inch HDD Tray (w/o logo)
Power Distributor	PDB-PT745-8824	1	SC745 24PIN REDUNDANT POWER DISTRIBUTOR
Part(s)	MCP-290-74502-0B	1	Plastic feet (4 pcs set) for 4U tower chassis, black color
Power Supply & Accessory	PWS-801-1R	2	800W,1U,12V OUTPUT POWER SUPPLY

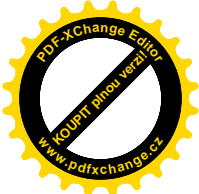
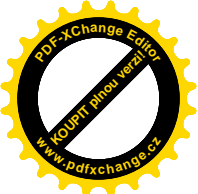
Optional Parts

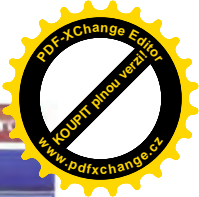
	Part Number	Qty	Description
Mounting Rail	CSE-PT26L-(B)	-	4U Chassis Rail Kit (Includes Side Handles) (B = Black)
LCD	MCP-220-00095-0B	-	5.25" USB LCD Kit
Fan Kit	MCP-320-00046-0N-KIT	-	Rear fan kit (8.2K RPM fan) for SC747B / 835X / 836BH
Fan Kit	MCP-320-00047-0N-KIT	-	Rear fan kit (5K RPM fan) for SC745B / 835X / 836BH
Cable	CBL-0153L	-	6pin GPU Power Adapter Cable from PDB 2x big 4pin, 16cm
Cable Management Arm	MCP-290-00073-0N	-	Supermicro Cable Management Arm for 2U, 3U and 4U chassis (Extendable Length: 70mm to 830mm)
Add-on Card Dummy	MCP-240-00096-0N	-	Black 5.25 LCD tray wo rail, support 1x 3.5 HDD
Peripheral Drive(s)	DVM-LITE-DVDRW24-HBT	-	BLACK LITE-ON 5.25" HH 24X DVD-RW SATA DRIVE PBF
HDD Tray Converter	MCP-220-00080-0B	-	Adaptor HDD carrier to install 2.5" HDD in 3.5" HDD tray



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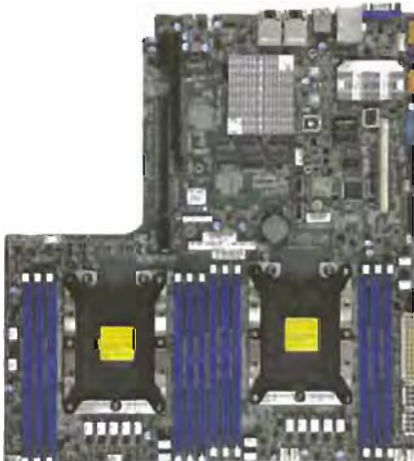
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X11DDW-NT

Home > Products > Motherboards > [X11DDW-NT]



Datacenter Optimized

Key Features

1. Intel® Xeon® Scalable Processors., Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2 UPI up to 10.4 GT/s
2. Intel® C622
3. Up to 1.5TB 3DS ECC RDIMM, DDR4-2666MHz; Up to 1.5TB 3DS ECC LRDIMM, in 12 DIMM slots
4. 1 PCI-E 3.0 x32 Left Riser Slot, 1 PCI-E 3.0 x16 Right Riser Slot, 1 PCI-E 3.0 x16 for Add-On-Module (AOM)
M.2 Interface: PCI-E 3.0 x4
M.2 Form Factor: 2242, 2260, 2280, 22110
M.2 Key: M-Key
U.2 Interface: PCI-E 3.0 x4, 4 PCI-E 3.0 NVMe x4 Internal Port(s)
5. 1 VGA port
6. Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10
7. Dual LAN with 10Gbase-T from C622

& Resources

- ▶ [Tested Memory List](#)
- ▶ [Tested HDD / SSD List](#)
- ▶ [Tested M.2 List](#)
- ▶ [Tested AOC List](#)
- ▶ [Motherboard Manual](#)
- ▶ [Quick Reference Guide](#)
- ▶ [Update Your BIOS](#)
- ▶ [BMC/IPMI Firmware](#)
- ▶ [Download the Latest Drivers and Utilities](#)
- ▶ [Download Drivers CD](#)
- ▶ [OS Compatibility](#)

Specifications

Product SKUs

MBD-X11DDW-NT	▪ X11DDW-NT
----------------------	-------------

Physical

Form Factor	▪ 12.3" x 13.4"
Dimensions	▪ 12.3" x 13.4" (31.24cm x 34.04cm)

CPU	▪ Intel® Xeon® Scalable Processors. ▪ Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2 UPI up to 10.4 GT/s
------------	--

System Memory

Memory Capacity	▪ Up to 1.5TB 3DS ECC RDIMM, DDR4-2666MHz; Up to 1.5TB 3DS ECC LRDIMM, in 12 DIMM slots
Memory Type	▪ 2666/2400/2133MHz ECC DDR4 RDIMM, LRDIMM
DIMM Sizes	▪ RDIMM: 64GB ▪ LRDIMM: 64GB ▪ 3DS LRDIMM: 128GB
Memory Voltage	▪ 1.2V
Error Detection	▪ Corrects single-bit errors ▪ Detects double-bit errors (using ECC memory)

Chipset	▪ Intel® C622
----------------	---------------

SATA	▪ Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10
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IPMI	▪ ASPEED AST2500
-------------	------------------

Network Controllers	▪ Dual LAN with 10Gbase-T from C622
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Graphics	▪ Aspeed AST2500 BMC
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Expansion Slots

PCI-E	▪ 1 PCI-E 3.0 x32 Left Riser Slot, ▪ 1 PCI-E 3.0 x16 Right Riser Slot, ▪ 1 PCI-E 3.0 x16 for Add-On-Module (AOM)
M.2	▪ M.2 Interface: PCI-E 3.0 x4 ▪ Form Factor: 2242, 2260, 2280, 22110 ▪ Key: M-Key

BIOS

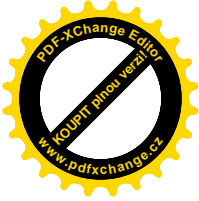
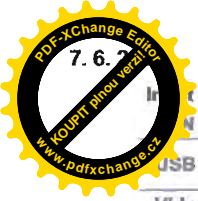
BIOS Type	▪ UEFI 256Mb
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Management

Software	▪ Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog
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PC Health

Voltage	▪ +1.8V, +12V, +3.3V, +5V, +5V standby, 5 (4-pin), 5+1 Phase-switching voltage regulator, Chassis intrusion header, Monitor CPU voltages, Supports system management utility, System temperature, VBAT
FAN	▪ 5x 4-pin fan headers (up to 5 fans), 5 fans with tachometer status monitoring, Dual Cooling Zone, Overheat LED indication, PWM fan speed control, Thermal control tachometer fan connectors
Temperature	▪ CPU thermal trip support
LED	▪ CPU / System Overheat LED, UID/Remote UID
Other Features	▪ Chassis intrusion detection, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, RoHS, Halogen Free, UID



IO	• 2 RJ45 10GBase-T ports
USB	• 6 USB 3.0 ports (4 rear + 2 headers) Type A
Video Output	• 1 VGA port
TPM	• 1 TPM Header

Note: For optimized or compatible chassis, additional parts may be required, please check with Supermicro sales rep

Parts List

Name	Part Number	Qty	Description
X11DDW-NT	MBD-X11DDW-NT	1	Motherboard
IO Cable	CBL-0476L	1	IPASS to 4 SATA cable

Parts List (Retail Package)

Name	Part Number	Qty	Description
X11DDW-NT	MBD-X11DDW-NT	1	Motherboard
IO Cable	CBL-0476L	1	IPASS to 4 SATA cable
Quick Reference Guide	MNL-1907-QRG	1	Quick Reference Guide

Optional Parts List

Name	Part Number	Qty	Description
TPM security module (optional, not included)	AOM-TPM-9671V-S		SPI capable TPM 2.0 with Infineon 9670 controller with vertical form factor
TPM security module (optional, not included)	AOM-TPM-9670V-S		SPI capable TPM 2.0 with Infineon 9670 controller with horizontal form factor

Chassis (Optimized for X11DDW-NT)

1U	2U	3U	Mid/Mini-Tower	Full Tower
SC815TQC-R706WB2				
SC815TQC-605WB				
SC116AC2-R706WB2	825TQC-R1K03WB			
SC113AC2-R706WB2	826BAC4-R1K23WB			
SC113AC2-605WB				
SC826BAC4-R1K23WB				

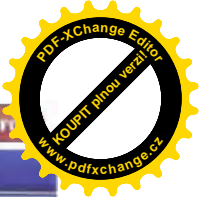
● = Most optimized Chassis for SuperServer Configuration
 Blue color = Compatible
 Green color = Global SKU & Compatible
 Red dot & green color = Optimized + Global SKU

Server (Optimized for X11DDW-NT)

Server Name
SYS-1029P-WTRT
SYS-6029P-WTRT
SSG-6019P-ACR12L

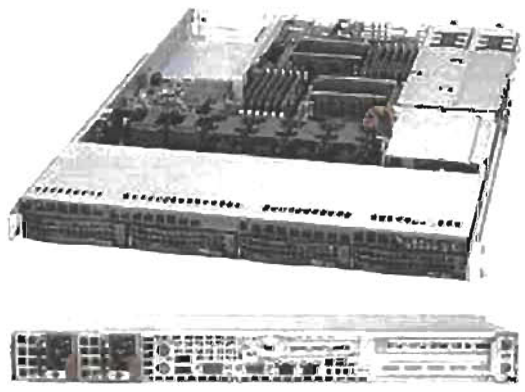
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SuperChassis 815TQC-R706WB2

[Home](#) > [Products](#) > [Chassis](#) > [1U](#) > [\[SC815TQC-R706WB2\]](#)



[▶ Chassis Manual](#)

Key Features



1. Optimized for X11 WIO (W series) motherboards
2. 4 x 3.5" hot-swap SAS/SATA
3. SAS or enterprise SATA HDD only recommended
4. 1U 4-Port 12Gbps Backplane Support 4x3.5" SAS3/SATA3 HDD/SSD
5. 1U Redundant 700/750W Single Output Power Supply Platinum level, 54.5mm width
6. 2 full-height & full-length expansion slot(s) , 1 low-profile expansion slot(s)
7. 4 x 40x56mm counter-rotation PWM fan(s)

For more information, please refer to the configuration or optional parts release notes. Refer to parts list for standard parts included.

Specifications

Product SKUs

CSE-815TQC-R706WB2

- SuperChassis 815TQC-R706WB2

Key Features

- Optimized for X11 WIO (W series) motherboards

Processor Support

- Single and Dual Intel® and AMD processors

Dimensions	
Height	• 1.7" (43 mm)
Width	• 17.2" (437 mm)
Depth	• 25.6" (650 mm)
Gross Weight	• 36 lbs (16.33 kg)
Packaging (W x H x L)	• 23.5" (597 mm) x 8.5" (216 mm) x 33.7" (856 mm)
Available Color	• Black

- 2 full-height & full-length expansion slot(s)
- 1 low-profile expansion slot(s)

Drive Bays

- 4 x 3.5" hot-swap SAS/SATA
- SAS or enterprise SATA HDD only recommended

Backplane

- 1U 4-Port 12Gbps Backplane Support 4x3.5" SAS3/SATA3 HDD/SSD

Motherboard: WIO (W series) SC815TQC-R706WB2

[X11DDW-L](#) [X11DDW-NT](#)

Power Supply: CSE-815TQC-R706WB2

[6019P-WTR](#)

System Cooling

Fans • 4 x 40x56mm counter-rotation PWM fan(s)

Operating Environment (System)

Operating Temperature Range	• 5°C - 35°C (41°F - 95°F)
Non-Operating Temperature Range	• -40°C - 70°C (-40°F - 158°F)
Operating Relative Humidity Range	• 8% - 90% (non-condensing)
Non-Operating Relative Humidity Range	• 5% - 95% (non-condensing)

Power Supply

1U Redundant 700/750W Single Output Power Supply Platinum level, 54.5mm width

Power Efficiency	• 94%
Total Output Power and Input	• 700W with Input 100 - 140Vac • 750W with Input 200 - 240Vac
AC Input Frequency	• 50-60Hz



Buttons	<ul style="list-style-type: none"> • Power On/Off button • System Reset Button • Unit Identification (UID) button
LEDs	<ul style="list-style-type: none"> • 2 Network Activity LEDs • Fan Fail/System Over Heat LED • HDD activity LED • Power Status LED • Unit Identification (UID) LED

Dimensions (L x W x H)	• 320 x 54.5 x 40.25 mm
Output Type	• Backplanes (gold finger)
+12V	<ul style="list-style-type: none"> • Max: 58A / Min: 0.5A (100Vac - 140Vac) • Max: 62A / Min: 0.5A (200Vac - 240Vac)
+5Vsb	• Max: 3A / Min: 0A
Power Distributor	<ul style="list-style-type: none"> • PDB-PT112-S2424 • O/P: 12V/54A • +5V Max: 25 • +3.3V Max: 25 • -12V Max: 0.6
Certification	 Platinum Certified

Regulatory / Power Supply	<ul style="list-style-type: none"> • BSMI • CCC • CE/EMC • FCC class A • UL/CB • UL/CUL
Power Supply Safety / EMC	<ul style="list-style-type: none"> • BSMI • CCC • CE/EMC • FCC class A • UL/CB • UL/CUL

Components

	Part Number	Qty	Description
Air Shroud	MCP-310-19002-0N	1	SC815/113/116 Intel DP X9, X8 PC air shroud, 12x13MB
HD Backplane	BPN-SAS3-815TQ	1	1U 4-Port 12Gbps Backplane Support 4x3.5" SAS3/SATA3 HDD/SSD
Cable(S)	CBL-0335L	1	CBL_FRONT CNTL_20 TO 20 PIN,RA,RND.TUBE,73CM,28AWG
CD-ROM & Accessory	CSE-PT93L-B	1	Black DVD dummy cover for SC813, 813M, 815, PBF-RoHS
Fan(s)	FAN-0156L4	4	40x40x56 mm 13K-11K RPM Counter-rotating Fan,RoHS/REACH
Front Panel	FPB-FP815U	1	815 UIO front control board (U)
Cooling Fan & Accessory	CSE-PT0135	1	FAN HOLDER FOR SIX 40X56MM COUNTER ROTATING FANS
Cooling Fan & Accessory	MCP-340-00035-0B	2	Dummy fan 40x56mm for 40x56 counter-rotating fan (cost-effective)
Drive Tray(s)	MCP-220-00075-0B	4	Black gen 5.5 hot-swap 3.5"; HDD tray
Power Distributor	PDB-PT112-S2424	1	WIO X11 Support,PDB-PT112-S2424 is based on PDB-PT112-2424
Part(s)	MCP-120-00030-0N	1	Blank LP L-bracket (1 row of capsule hole)
Part(s)	MCP-120-00053-0N	2	Blank FH L bracket w/o SCSI cutout for SC825,836,846,743
Power Supply & Accessory	PWS-706P-1R	2	1U 750W redundant power with 54.5mm(Platinum),HF,RoHS/REACH,PBF
Power Supply & Accessory	MCP-250-81502-0N	1	SC815 Redundant Power Distributor Cover
Mounting Rail(s)	MCP-290-00054-0N	1set	Rail set, quick/quick, optional for 1U 17.2
Rear Window	MCP-240-00098-0N	1	WIO rear window for SC113,SC116, SC815 Redundant PWS

Optional Parts List

	Part Number	Qty	Description
Adaptor HDD carrier	MCP-220-00043-0N	--	Adaptor HDD carrier to install 2.5" HDD in 3.5" HDD tray
Front Bezel	CSE-PTFB-813LB (black)	--	Front Bezel Cover with Key Lock & Filter; Black, Beige, LCD options
Front Tray	CSE-PT40 (B)	--	Front USB and COM tray (Occupies Slim Floppy Drive Location)
Heatsink / Retention	N/A	--	Please refer to our Thermal Components Matrix
LCD/OLED Solutions	N/A	--	Please reference the LCD/OLED Display Solutions for details
Mounting Rail	MCP-290-00056-0N	--	19" to 26.4" outer rail, /quick, for 1U 17.2" W chassis
Peripheral Drive(s)	DVM-PNSC-DVD-SBT3	--	Black slim SATA DVD (8x DVD, 24x CDR), Panasonic
Peripheral Drive(s)	MCP-220-81502-0N	--	Slim SATA DVD kit (include backplane, cable)
Tray(s)	MCP-290-00036-0B	--	Black DVD dummy tray, supports 1x 2.5" slim HDD (9.6mm thick)

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8/16-Port KVM over IP Switch 1 Local / 1 Remote User Access

KN1108VA / KN1116VA

- Aten's new generation of KVM over IP switches – KN series allows local console access and remote over IP access for operators to monitor and access their entire data center over a network using a web-based browser. In addition, they offer out-of-band access with external modem support for BIOS-level troubleshooting when the network is down.

To help you manage and control an entire data center, our KVM over IP switches support blade servers and chassis. With powerful new features such as Power Association – KVM ports can be associated with ATEN PDU power outlets for power management of servers from the KVM over IP switches' user interface.

KVM over IP switches now support the new Control Center Video Session Recorder (CCVSR) software. The CCVSR records all operations made on servers accessed through KVM over IP switches. Every operation and change from the BIOS level to logging in, from running software applications to configuring the operating system- is recorded and saved to a secure video file as evidence, without exception.

The Virtual Media function lets you map to storage media on USB, hard disk and DVD/CD drives located on remote servers – allowing administrators to conduct file transfers, install applications, run O.S. updates, or perform diagnostics across a network with ease.

Enhanced capabilities of KVM over IP switches also include: a Message Board, Panel Array Mode™, Mouse DynaSync™, Adapter ID and Secure Serial Server Access. The secure access to serial-controlled devices includes network equipment, Unix servers, Linux servers, Sun servers and many more serial consoles. It provides installation without needing expensive serial dongles.

With dual on-board NICs and dual power supplies, the KVM over IP switches are built for reliability, to ensure 24/7 availability of remote access to all server room computers.

With Aten KVM over IP switches, IT administrators can manage their server rooms and data centers from practically anywhere – minimizing travel costs and MTTR (Mean Time to Repair) – ensuring the highest availability of data center services possible.

KN1108VA



Front view



Rear view



KN1116VA

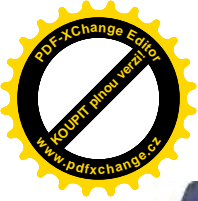


Front view



Rear view





Features

Hardware

- High port density – RJ-45 connectors for up to 8/16 ports in a 1U housing
- Laptop USB Console (LUC) – A dedicated USB port directly connects to a laptop for easy console operation
- Two separate buses for one local console access and one remote KVM over IP access
- Two 10/100/1000 Mbps NICs for redundant LAN or two IP operation
- Blade server support
- Supports PS/2, USB, Sun Legacy (13W3) and serial (RS-232) connectivity
- Local console provides PS/2 and USB keyboard and mouse support
- Supports multiplatform server environments: Windows, Mac, Sun, Linux and VT100 based serial devices
- Audio enabled
- Virtual Media support lets you map DVD-CD-ROMs and other storage media to a remote server
- Dual Power Supply
- High video resolution – up to 1920 x 1200* @ 60Hz for local and remote sessions
- Monitor and control up to 16 computers on a single level, or control up to 256 computers in a cascade**.

*1920 x 1200 only supported by KA7166, KA7168, KA7169, KA7175, KA7176, KA7177, KA7170, and KA7178

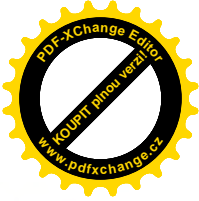
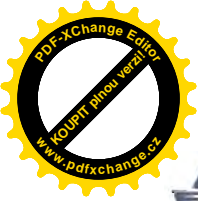
** Cascade-compatible KVM Switches include the following: CS9134, CS9138, CS1308, CS1316, KH1508A, and KH1516A

Management

- Up to 64 user accounts
- UP to 32 concurrent logins
- End session feature – administrators can terminate running sessions
- Event logging and Windows-based Log Server support
- Critical system event notification via SMTP email; SNMP trap and Syslog support
- Firmware upgradeable
- Out-of-Band Access – Modem dial-in/dial-out/dial-back support
- Adapter ID Function: Stores port information allowing administrators to relocate the servers to different ports, without having to re-configure the adapters and switches
- Port Share Mode allows multiple users to gain access to a server simultaneously
- Integration with ATEN CC2000 Management Software
- Power Association enables the switch's KVM ports to be associated with ATEN'S PDUs power outlets for remote power management of the servers from the switch's interface
- Power Over the NET™ integration for remote power control, plus support for 3rd party power distribution units (PDUs)
- Manage browser access methods (Browser, http, https)
- IPv6 capable

Easy-to-Use Interface

- Local Console, browser-based, and AP GUIs offer a unified multilanguage interface to minimize the user training time and increase productivity
- Multiplatform client support (Windows, Mac OS X, Linux, Sun)
- Multi-browser support: Internet Explorer, Chrome, Firefox, Safari, Opera, Mozilla, Netscape
- Browser-based UI in pure Web technology allows administrators to perform administrative tasks without pre-installed Java software package required
- Magic Panel – a special hideaway control panel with configurable function icon
- Full-screen or sizable and scalable Virtual Remote Desktop
- Panel Array Mode available to both local console operators and remote access users
- Keyboard/Mouse Broadcast – keyboard and mouse inputs can be duplicated on all the attached servers
- Video syncing with the local console – local console monitor's EDID information stored on the KVM Adapter Cables for display resolution optimization



Advanced Security

- High grade security – supports FIPS 140-2 level 1 security standards
- Remote authentication support: RADIUS, LDAP, LDAPS, and MS Active Directory
- Supports TLS 1.2 data encryption and RSA 2048-bit certificates to secure users log in from browser
- Flexible encryption design allows users to choose any combination of DES, 3DES, AES, RC4, or Random for independent KB/Mouse, video, and virtual media data encryption
- IP/MAC Filter for enhanced security protection
- Configurable user and group permissions for server access and control
- Automated CSR creation utility and third party CA certificate authentication

Virtual Media

- Virtual media enables file applications, OS patching, software installation and diagnostic testing
- Works with USB enabled servers in operating system and BIOS level
- Support DVD/CD drives, USB mass storage devices, PC hard drives and ISO images

Virtual Remote Desktop

- Video quality and video tolerance can be adjusted to optimize data transfer speed; monochrome color depth setting, threshold and noise settings for compression of the data bandwidth in low bandwidth situations
- Full screen video display or scalable video display
- Message Board for communication among remote users
- Mouse DynaSync™ - automatically synchronizes the local and remote mouse movements
- Keyboard pass through support
- Exit Macros support
- On-screen keyboard with multilanguage support
- BIOS-level access

Highlights

Laptop USB Console (LUC)

A dedicated USB port directly connects to your Laptop for easy console operation.

Power Association

Used in conjunction with ATEN PDUs power management device, you can associate a KVM over IP Switch's port with a PDU's power outlet, and then manage the power operation of a server from the switch's interface – a single interface point. It also enables you to associate a second outlet port if the server has a dual power supply, and lets you synchronize the operation for both power supplies. In this way, Power Association reduces maintenance time and increases management efficiency.

Blade Server Support

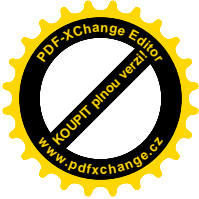
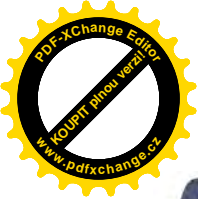
Support for blade server associations with KVM switch ports allows the blade server chassis and individual blades to be integrated into the sidebar tree view and accessed easily.

Improved SNMP Trap

Monitor the critical events on your system and customize the settings according to your needs. Logged events are divided into categories providing clear and complete information to administrators.

Dual IP/Dual Power

Dual IP/ Dual Power supply operation provides the backup redundancy, and reliability. Should one of the IP or one of the power supplies become unavailable, the other will take over in order to keep the system functioning normally.

**Magic Panel**

A special hideaway control panel with configurable function icon enables you to control and manage the servers more convenient.

Easy-to-Use User interface

A user-friendly, intuitive, GUI provides convenient, access, configuration and operation. Local Console, browser-based and AP GUIs offer a unified multilanguage interface to minimize user training time and increase productivity.

Virtual Remote Desktop

The remote desktop can appear full-screen or as a window with a flexible scaling video display. Advanced features such as the Message Board, Mouse DynaSync™, Virtual Media, and Keyboard Pass Through, create a Virtual Remote Desktop that allows users to operate servers from remote locations just as if they were actually at the local site.

Superior Video

With enhanced fps throughput for crisp responsive video display, the switches offer resolutions of up to 1920 x 1200 @ 60Hz.*

Configurable Network Bandwidth settings

A network setting is provided that allows you to streamline data throughput by adjusting the size of the data stream (bandwidth) to match network traffic conditions. Video performance can be adjusted so that data throughput is optimized for the available network bandwidth. With high speed LAN access, the network setting can be adjusted so that a greater amount of video information is sent, resulting in a higher quality video display. In a limited bandwidth situation, the network setting can be adjusted so that net lag is minimized.

Mouse DynaSync™

Automatically synchronizes the local and remote mouse movements for perfect alignment of mouse pointers, regardless of server mouse acceleration settings.

Panel Array Mode

Panel array mode permits simultaneous monitoring of the video output of the installations' servers. Operators can monitor the screen display of multiple servers for real-time server monitoring.

Message Board

To alleviate the problem of access conflicts arising from multiple logins, the Message Board functions like an Internet chat program, allowing users who are logged in to instantly communicate with each other.

Adapter ID

The Adapter ID Function stores port information such as the Adapter ID, OS, keyboard language, adapter name, operation modes, and etc. This enables administrators to relocate the servers to different ports, without having to re-configure the adapters and the switches.

Virtual Media

Virtual Media support lets you map DVD/CD-ROMs and other storage media to a remote server. This function allows you to conduct file transfers, application and OS patches, and diagnostics remotely.

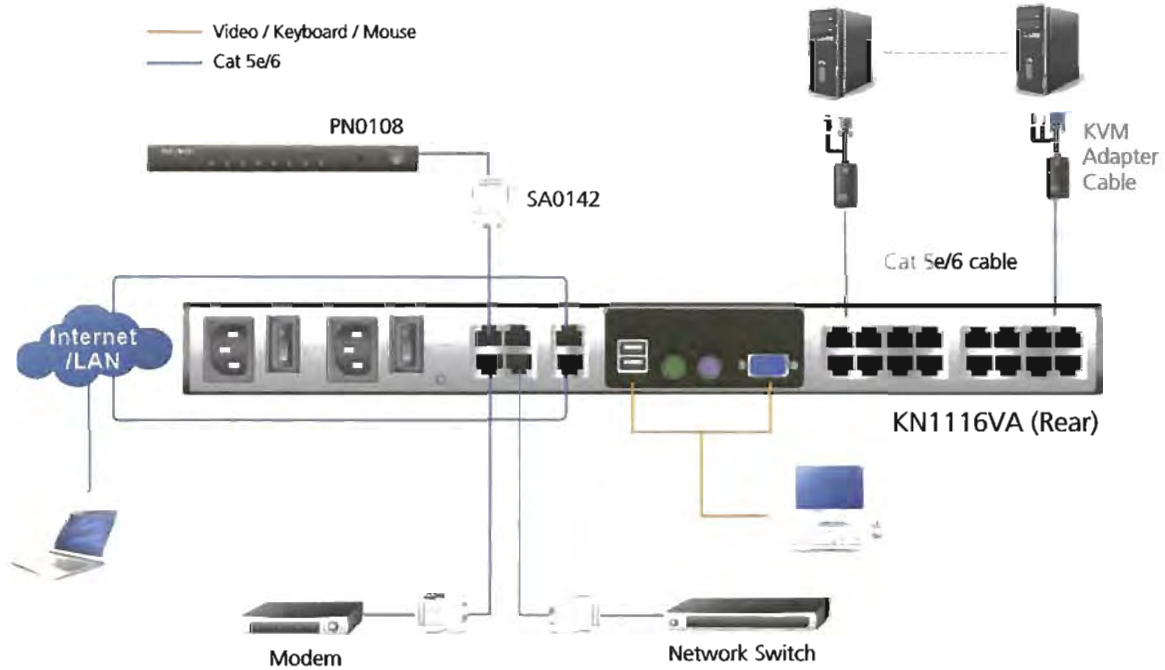
Remote Management of KVM and Serial Devices

Combined access fit for data centers and computer rooms with system racks containing both KVM and serial controlled devices.

Secure Serial Server Access

Supports secure access to serial-controlled devices including network equipment, Unix servers, Linux servers, Sun servers and many more. Plus ATEN's secure serial server access provides installation without needing expensive serial dongles.

*1920 x 1200 only supported by KA7166, KA7168, KA7169, KA7175, KA7176, KA7177, KA7170, and KA7178

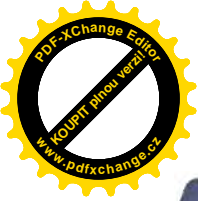


KVM Adapter Cables

The following KVM Adapter cables are required for use with the KVM over IP Switches:

Type:	PS/2 KVM Adapter Cable	USB KVM Adapter Cable	Two-Tapkey KVM Adapter Cable	Serial KVM Adapter Cable	USB Virtual Media KVM Adapter Cable	USB Virtual Media KVM Adapter Cable with Audio	USB Virtual Media KVM Adapter Cable with Smart Card Reader	Dual Output USB Virtual Media KVM Adapter Cable with Audio	DVI USB Virtual Media KVM Adapter Cable with Smart Card Reader	15Pin USB Virtual Media KVM Adapter Cable with Smart Card Reader	DisplayPort USB Virtual Media KVM Adapter Cable with Smart Card Reader
Interface:	6-pin Mini-DIN Male 6-pin Mini-DIN Male HDB-15 Male	USB Type A Male HDB-15 Male	13WV3 Male Mini-DIN 8 Male	RS-232 DB-9 Female	USB Type A Male HDB-15 Male	USB Type A Male HDB-15 Male 2 Audio plugs	USB Type A Male HDB-15 Male 1 HDB-15 Male	USB Type A Male HDB-15 Male 2 Audio plugs	USB Type A Male HDB-15 Male DVI-D Male	USB Type A Male HDB-15 Male HDAI Male	USB Type A Male HDB-15 Male DisplayPort Male

*1920 x 1200 only supported by KA7166, KA7168, KA7169, KA7175, KA7176, KA7177, KA7170, and KA7178.



Specifications

Function	KN1108VA	KN1116VA
Console Connections		
Local	1	1
Remote	1	1
Computer Connections		
Direct	8	16
Maximum	128 (via Cascade)	256 (via Cascade)
Port Selection Pushbuttons, GUI, Hotkeys		
Connectors		
Console Ports	2 x USB Type-A Female	
	1 x 6-pin Mini-DIN Female (Purple)	
	1 x 6-pin Mini-DIN Female (Green)	
USB Port	1 x HDB-15 Female (Blue)	
Audio	3 x USB Type-A Female	
Laptop USB Console (LUC) Port	2 x Audio Jack Female	
KVM Ports	1 x USB Mini-B Female	
Serial	8 x RJ-45 Female	16 x RJ-45 Female
PON	2 x RJ-45 Female	
Modem	1 x RJ-45 Female	
LAN Ports	2 x RJ-45 Female	
Power	2 x IEC 60320/C14	
Switches		
Port Selection	2 x Pushbutton	
Reset	1 x Semi-recessed Pushbutton	
Power	2 x Rocker	
LEDs		
Online	8 (Green)	16 (Green)
Link 10 / 100 / 1000 Mbps	2 (Red/Orange/Green)	
Power	2 (Blue)	
Emulation		
Keyboard / Mouse	PS/2 / USB	
Video		
Local	1920 x 1200 @ 60 Hz	
Remote	1920 x 1200 @ 60 Hz	
Scan Interval	1-255 Seconds	
Maximum Input Power Rating	100-240V AC, 50-60Hz, 1A	
Power Consumption	110V/14.5W; 220V/14W	110V/16.5W; 220V/16W
Environmental		
Operating Temperature	0° to 50° C	
Storage Temperature	-20° to 60° C	
Humidity	0 - 80% RH, Non-condensing	
Physical Properties		
Housing	Metal	
Weight	3.52 kg	3.56 kg
Dimensions (L x W x H)	43.84 x 28.78 x 4.40 cm	

Product information is subject to change without prior notice

ATEN International Co., Ltd.

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www.aten.com E-mail: marketing@aten.com

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KA7169

USB DisplayPort Virtual Media KVM Adapter with Smart Card Support



The KA7169 KVM Adapter Cable connects a KVM switch to the DisplayPort video and USB ports of a target computer. The KA7169 supports a DisplayPort connection and provides a USB plug to connect a target computer for Smart Card/CAC support*. With its small size and light weight design, it represents the next generation of KVM Adapter Cables – offering superior signal compensation and delay skew technologies for greatly enhanced video quality.

* Virtual media and CAC reader functions are not supported for KH1508A, KH1516A, KH1508Ai, KH1516Ai, KL1508A, KL1516A, KL1508Ai, KL1516Ai, KH2508A, KH2516A, KN2116A, KN4116, KN2132, or KN4132.

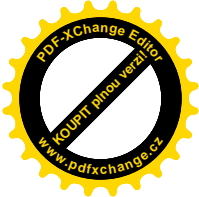
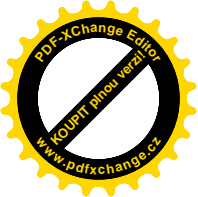


Features

- Auto Signal Compensation (ASC), no DIP switch setting needed for different distances
- Keyboard and mouse emulation – keeps your server functioning smoothly when it's disconnected from the switch's KVM port or is relocated to a different KVM port
- Lifetime firmware upgrades
- Superior video quality - supports resolution up to 1920 x 1200 (Reduced blanking)*
- Built in ASIC for greater reliability and compatibility
- CPU module designed with automatic conversion to allow for flexible interface combinations (PS/2, USB) to control all computer types (PC, Mac, Sun)
- Compact size
- Virtual Media Support **
- Smart Card / CAC Reader Support **

* This maximum resolution may vary depending on the transmission distance. For more details, please refer to the product pages of the connected KVM switches.

** Virtual media and CAC reader functions are not supported for KH1508A, KH1516A, KH1508Ai, KH1516Ai, KL1508A, KL1516A, KL1508Ai, KL1516Ai, KH2508A, KH2516A, KN2116A, KN4116, KN2132, or KN4132.

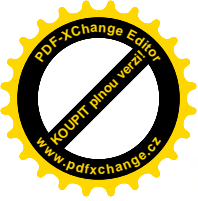


Simply Better Connections

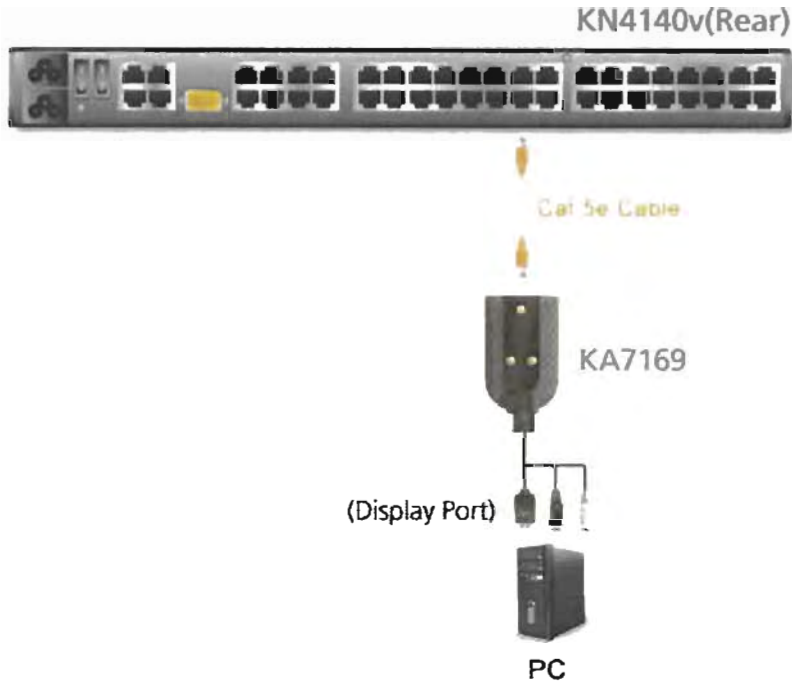
Specifications

DisplayPort USB Virtual Media KVM Adapter Cable with Smart Card Reader (CPU Module)

Connectors	
Link	1 x RJ-45 Female
Computer	2 x USB Type A Male 1 x DisplayPort Male
LEDs	
Link	1 (Green)
Power	1 (Orange)
Physical Properties	
Housing	Plastic
Weight	0.11 kg (0.24 lb)
Dimensions (L x W x H)	9.10 x 5.60 x 2.12 cm (3.58 x 2.2 x 0.83 in.)
Note	For some of rack mount products, please note that the standard physical dimensions of WxDxH are expressed using a LxWxH format.



Diagram

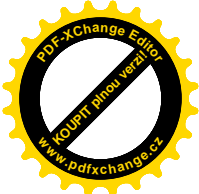
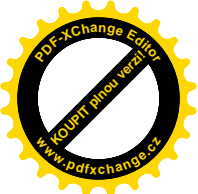


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NETGEAR

ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T



Leading the industry with the 2nd generation of 10-Gigabit Smart Managed Switches, Purposely Designed for SMB with Cost-Effective 10GBASE-T Connectivity and Advanced L2+/Layer 3 Lite Features

As a leading provider of network equipment for SMBs, NETGEAR® understands the importance of reliable and high performance networks. With the growth of virtualization, cloud-based services and applications like VoIP, video streaming and IP surveillance, SMB networks need to extend beyond simple reliability to higher speed and performance. The 10-Gigabit Smart Managed Switch series from NETGEAR presents the right solution for this requirement; delivering unprecedented non-blocking 10-Gigabit bandwidth at an affordable cost.

The NETGEAR ProSAFE® XS708T, XS716T, XS728T, and XS748T are powerful Smart Managed Switches that come with 8, 16, 24, or 44 10-Gigabit Copper ports and either 2 Shared (Combo) Copper/SFP+ ports (XS708T/XS716T) or 4 additional Dedicated SFP+ ports (XS728T/XS748T) for 10G Fiber links. The NETGEAR 10-Gigabit Smart Managed Switches are purposely designed as a cost-effective way to provide 10G connections to 10G-capable servers and NAS (Network Attached Storage) systems. They can be used at the "center of a small business network" or as an aggregation / access switch in a larger organization including workgroup access, connecting to a 10-Gigabit NETGEAR ProSAFE Fully Managed Switch on one end and extending the 10G connections to the edge. The XS708T and XS716T are also ideal for smaller workgroups that need high bandwidth for sharing, collaborating, editing, and publishing high-density content like video or animation.

Highlights

The ProSAFE 10G Smart Managed Switches provide comprehensive L2+/Layer 3 Lite features in order to meet current and future needs on virtualization, converged networking and mobility. Some of the main features include:

- Advanced VLAN features such as Protocol-based VLAN, MAC-based (Media Access Control) VLAN and 802.1x Guest VLAN
- Advanced QoS (Quality of Service) with L2/L3/L4 awareness and 8 priority queues
- IPv4 and IPv6 static routing
- Private VLAN
- Dynamic VLAN assignment
- IGMP and MLD snooping
- Advanced Security
- IPv6 for management, QoS and ACL

10-Gigabit Transition with BASE-T

- 10GBASE-T, like other BASE-T technologies, uses the standard RJ45 Ethernet jack
- It is backward compatible, auto-negotiating between higher and lower speeds -- thereby not forcing an all-at-once network equipment upgrade
- Cat5/Cat5e are supported for Gigabit speeds up to 100 meters

- Cat6 twisted pair copper cabling supports 10-Gigabit speeds up to 45 meters
- Cat6a or newer Cat7 cabling will allow for up to 100 meter 10GBASE-T connections

Designed as Core Switch for SMB Network:

- 10G connection to 10G-capable servers and network storage
- Powerful L2+/Layer 3 Lite features make them the most cost-effective core switches for SMB and virtualization environment
- Future-proof your network with 10G bandwidth, advanced traffic management and comprehensive IPv6 support
- Static routing helps to route internal traffic for more efficient use of network resources
- IGMP and MLD snooping provide advanced multicast filtering

Act as Aggregation Switch for Medium Sized Networks

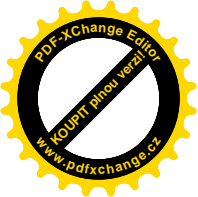
- 10-Gigabit switches help to resolve the congestion issue between network edge and core, which is caused by the broader adoption of Gigabit-to-the-desktop
- 10-Gigabit Ethernet provides greater scalability than multiple Gigabit Ethernet links, resulting in a simplified and highly efficient network infrastructure

- Up to eight 10-Gigabit Ethernet links can be aggregated into a virtual 80-Gbps connection
- 10-Gigabit Ethernet reduces cabling complexity and uses existing cabling efficiently

Smart IT, not Big IT

- Easy-to-use Web browser-based management GUI makes setup and management simple
- Standards-based technology ensures interoperability with any standards-based devices in the existing network
- Dual firmware images improve reliability and uptime to your network
- Worry-free with NETGEAR ProSAFE LIFETIME Hardware Warranty*
- Minimal down-time with NETGEAR ProSAFE LIFETIME Next-Business-Day Replacement Warranty
- Get deployment assistance with 90-days Free 24x7 Advanced Technical Phone Support**
- LIFETIME Online Chat Technical Support





NETGEAR

ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

Hardware at a Glance

Model Name	Form-Factor	FRONT				REAR	
		100M/1G/10G Copper Ports	1G/10G Copper Ports	1G/10G SFP+ Ports	Firmware/Config Access	Power Supply	Fans
XS708T	Rackmount	8		2 shared (combo)	1 x USB	1 internal PSU, fixed	1 internal, fixed fan
XS716T	Rackmount	16		2 shared (combo)	1 x USB	1 internal PSU, fixed	2 internal, fixed fans
XS728T	Rackmount		24	4 dedicated	1 x USB	1 internal PSU, fixed	4 internal, fixed fans
XS748T	Rackmount		44	4 dedicated	1 x USB	1 internal PSU, fixed	4 internal, fixed fans



XS708T: 8-port 10-Gigabit Smart Managed Switch

- 8 x 10GBASE-T copper ports supporting 10G/1G/100M speeds
- 2 x Shared (combo) 10GBASE-T copper/10GBASE-X SFP+ ports supporting 10G/1G speeds

XS728T: 28-port 10-Gigabit Smart Managed Switch

- 24 x Dedicated 10GBASE-T copper ports supporting 10G/1G speeds
- 4 x Dedicated 10GBASE-X SFP+ 10G ports supporting 10G/1G speeds

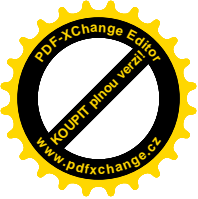


XS716T: 16-port 10-Gigabit Smart Managed Switch

- 16 x 10GBASE-T copper ports supporting 10G/1G/100M speeds
- 2 x Shared (combo) 10GBASE-T copper/10GBASE-X SFP+ ports supporting 10G/1G speeds

XS748T: 48-port 10-Gigabit Smart Managed Switch

- 44 x Dedicated 10GBASE-T copper ports supporting 10G/1G speeds
- 4 x Dedicated 10GBASE-X SFP+ 10G ports supporting 10G/1G speeds



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ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

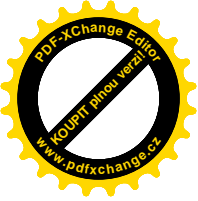
Software at a Glance

LAYER 2+ / LAYER 3 LITE FEATURES

Management	IPv4/IPv6 ACL and QoS	IPv4/IPv6 Multicast filtering	Auto-VoIP, Auto-Video	IEEE (802.3az) Energy Efficient Ethernet	VLANs	Convergence	IPv4 & IPv6 Static Routing
Web Browser-based GUI (HTTP/HTTPS).							
PC-Based Smart Control Center Utility (SCC)	L2, L3, L4 Ingress	IGMP and MLD Snooping	Yes	Yes	Static, Dynamic, Voice, MAC, Protocol-based, and Private	LLDP-MED, RADIUS, 802.1X	Yes
RMON, SNMP							

Performance at a Glance

Model Name	Packet buffer	CPU	ACLs	MAC Address Table RP/NDP Table VLANs	Fabric	Latency (Max Connection Speed)	Static Routes (IPv4 & IPv6)	Multicast IGMP Group
XS708T	2 MB	600 MHz Cortex-A9 Single Core, 512MB RAM, 8MB SPI + 256 NAND FLASH	100 shared	16K MAC 738 ARP/NDP 256 VLANs	160Gbps line-rate	10GBASE-T: <3.012 µs 10GBASE-X SFP+: <2.466 µs	IPv4: 32 IPv6: 32	512
XS716T	2 MB	600 MHz Cortex-A9 Single Core, 512MB RAM, 8MB SPI + 256 NAND FLASH	100 shared	16K MAC 738 ARP/NDP 256 VLANs	320Gbps line-rate	10GBASE-T: <2.624 µs 10GBASE-X SFP+: <2.128 µs	IPv4: 32 IPv6: 32	512
XS728T	3 MB	800 MHz Dual Core, 512MB RAM, 8MB SPI + 256MB NAND Flash	164 shared	16K MAC 1K ARP/NDP 512 VLANs	560Gbps line-rate	10GBASE-T: <11.649 µs 10GBASE-X SFP+: <2.619 µs	IPv4: 64 IPv6: 64	512
XS748T	3 MB	800 MHz Dual Core, 512MB RAM, 8MB SPI + 256MB NAND Flash	164 shared	16K MAC 1K ARP/NDP 512 VLANs	960Gbps line-rate	10GBASE-T: <3.674 µs 10GBASE-X SFP+: <3.693 µs	IPv4: 64 IPv6: 64	512



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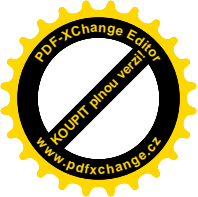
ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

Features at a glance

HARDWARE FEATURES	BENEFITS
10GBASE-T Copper Ethernet connections	Support low-latency, line-rate 10G Copper "BASE-T" technology with backward compatibility to Fast Ethernet and Gigabit Ethernet. Cost-effectively migrate current network to 10G capacity by utilizing the existing Cat6 RJ45 short connections (up to 30m) and Cat6a/Cat7 connections up to 100m.
10GBASE-X SFP+ ports	Providing flexibility to uplink to 10G-capable core or aggregation switches that support fiber links. Backward compatible to Gigabit fiber. Support copper or fiber modules.
USB Configuration Port	Quickly and conveniently upgrade or restore firmware, load or backup configuration files, or download system log files for troubleshooting.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for ongoing operation cost savings.
SOFTWARE FEATURES	BENEFITS
Comprehensive IPv6 Support for Management, ACL and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
IPv4 & IPv6 Static Routing	A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient.
Robust security features: <ul style="list-style-type: none"> • 802.1x authentication (EAP) • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses 	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users
Comprehensive QoS features: <ul style="list-style-type: none"> • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting 	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
Auto-VoIP, Auto-Voice VLAN, and Auto-Video VLAN	Automatic Voice over IP prioritization (Auto-VoIP) simplifies most complex multi-vendor IP telephone deployments either based on protocols (SIP, H.323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address, providing the best class of service to VoIP streams (both data and signaling) over other ordinary traffic by classifying traffic, and enabling correct egress queue configuration. Similarly, Auto-Video VLAN enables IGMP snooping to minimize broadcast streams.
IGMP Snooping and MLD Snooping	Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches designated receivers without the need of an extra multicast router.
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch.
Dynamic VLAN Assignment (RADIUS)	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies. Users are free to move around and enjoy the same level of network access regardless of their physical location on the network.
Private VLAN	Private VLANs help reduce broadcast with added security.
Dual Firmware Images and Configuration Files	Dual firmware images and dual configuration files for transparent firmware updates/configuration changes with minimum service interruption



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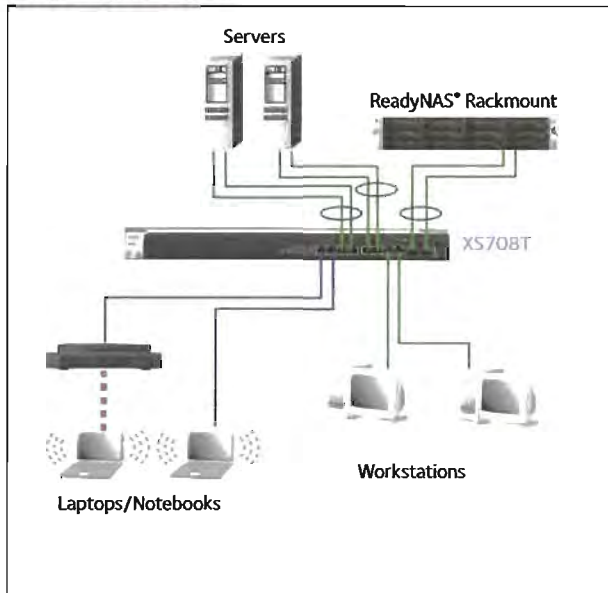
ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

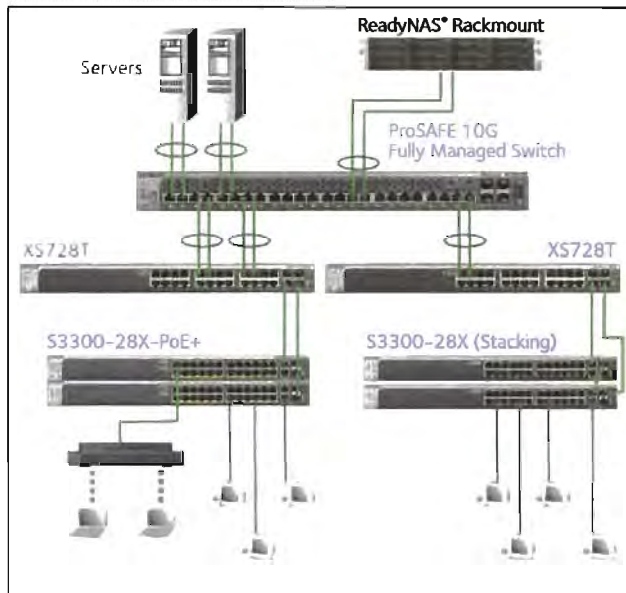
XS708T, XS716T, XS728T, XS748T

Target Application

XS708T in SMB Network



XS728T in Medium-sized Network

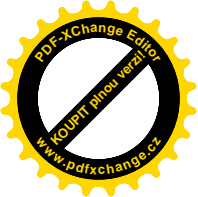


— 10GE link — GE link - - - Wireless link

Why 10-Gigabit Switches and Why from NETGEAR?

NETGEAR introduced the industry's first cost-effective 10-Gigabit Switches for SMBs in 2013 and is the leading provider for 10G solutions at affordable price points:

- Ideal for SMBs to use as the core switch, connecting to 10G-capable Servers and network storage.
- Expand network capacity, remove performance bottlenecks and/or support premise expansion needs.
- Cost-effectively expand 10G bandwidth from core switch in medium-sized networks to access switches which are equipped with 10G uplinks.
- Powerful feature sets with advanced L2+/Layer 3 Lite functions, enhanced security measures, static routing, dynamic VLAN assignment and IPv6 management and support.
- Improved usability for easier and smoother deployment of voice, video, and WLAN on the same converged platform.
- LIFETIME warranty on hardware, LIFETIME Next-Business-Day (NBD) replacement, LIFETIME tech support online chat, and 90-days Free Advanced Tech Phone Support** for peace-of-mind.



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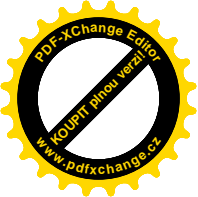
ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

Technical Specifications

PRODUCT	XS708T	XS716T	XS728T	XS748T
100M/1G/10G RJ-45 copper ports	8	16	n/a	n/a
1G/10G copper ports	n/a	n/a	24	44
1G/10G SFP+ (fiber) ports	2 shared (combo)	2 shared (combo)	4 (dedicated)	4 (dedicated)
USB port (for config file upload/backup & firmware updates)	Yes			
PERFORMANCE SPECIFICATION				
Packet buffer memory (Dynamically shared across only used ports)	2MB		3MB	
Forwarding modes	Store-and-forward			
Bandwidth	160Gbps	320Gbps	560Gbps	960Gbps
Priority queues	8			
Priority queuing	Weighted Round Robin (WRR) and Strict Priority			
MAC Address database size (48-bit MAC addresses)	16K			
Multicast groups	512			
Number of IPv4 static routes	32		64	
Number of IPv6 static routes	32		64	
Number of VLANs	256		512	
Number of ARP cache entries	738		1024	
Number of DHCP snooping bindings	8K		1K	
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs		164 shared for MAC, IP and IPv6 ACLs	
Packet forwarding rate (64 byte packet size) (Mpps or Mpps)	119.0	238.0	416.6	714.2
Jumbo frame support	Up to 9K packet size		Up to 10K packet size	
Acoustic noise level @ 25°C (dBA) (ANSI-S10.12)	27.4 dBA	29.1 dBA	41.6 dBA	47.8 dBA
Mean Time Between Failures (MTBF) @ 25°C	276,197 hours	276,832 hours	514,977 hours	483,808 hours
L2 SERVICES - VLANS				
IEEE 802.1Q VLAN tagging	Yes			
IP-based VLANs	Yes			
MAC-based VLANs	Yes			
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address		Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address, voice packets must have 802.1Q VLAN tag	
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue			
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.			No
Auto-Video VLAN	Yes			
Private VLAN	Yes			



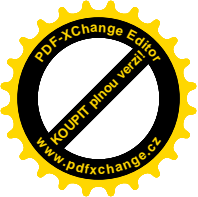
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ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

PRODUCT	XS708T	XS716T	XS728T	XS748T
L2 SERVICES - AVAILABILITY				
Broadcast, multicast, unknown unicast storm control			Yes	
IEEE 802.3ad - LAGs (LACP)			Yes	
IEEE 802.3x (full duplex and flow control)			Yes	
IEEE 802.1D Spanning Tree Protocol			Yes	
IEEE 802.1w Rapid Spanning Tree Protocol			Yes	
IEEE 802.1s Multiple Spanning Tree Protocol			Yes	
L2 SERVICES - MULTICAST FILTERING				
IGMP snooping (v1, v2 and v3)			Yes	
MLD snooping support (v1 and v2)			Yes	
IGMP snooping queries			Yes	
Block unknown multicast			Yes	
Multicast VLAN Registration (MVR)	Yes			No
L3 SERVICES - DHCP				
DHCP client			Yes	
DHCP snooping			Yes	
L3 SERVICES - ROUTING				
IPv4 static routing	32			64
IPv6 static routing	32			64
VLAN routing			Yes	
Host ARP table (number of entries)	738			1024
ICMP Router Discovery Protocol (IRDP)	Yes			No
Number of IP VLAN interfaces (routed VLANs)	15			32
LINK AGGREGATION				
IEEE 802.3ad - LAGs (LACP)			Yes	
Manual Static LAG			Yes	
# of Static or LACP LAGs			12 LAGs with max 8 members in each LAG	24 LAGs with max 8 members in each LAG
# of members in each LAG	8 LAGs with max 8 members in each LAG			
NETWORK MONITORING AND DISCOVERY SERVICES				
802.1ab LLDP			Yes	
SNMP			v1, v2c, v3	
RMON group 1,2,3,9			Yes	
NETWORK SECURITY				
IEEE 802.1x			Yes	
Guest VLAN			Yes	
RADIUS-based VLAN assignment via 1x			Yes	
MAC-based 1x			Yes	
RADIUS accounting			Yes	
Access Control Lists (ACLs)			L2 / L3 / L4	
IP-based ACLs (IPv4 and IPv6)			Yes	
MAC-based ACLs			Yes	



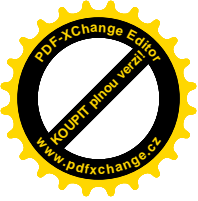
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PRODUCT	XS708T	XS716T	XS728T	XS748T
TCP/UDP-based ACLs			Yes	
MAC lockdown			Yes	
MAC lockdown by the number of MACs			Yes	
Control MAC # Dynamic learned entries			600	
Control MAC # static entries		20		600
IEEE 802.1x RADIUS port access authentication			Yes	
Port-based security by locked MAC addresses			Yes	
Dynamic ARP inspection	Yes			No
Broadcast, multicast, unknown unicast storm control			Yes	
DoS attacks prevention	Yes			No
QUALITY OF SERVICE (QoS)				
Port-based rate limiting		Egress only		Ingress and egress
Port-based QoS			Yes	
Support for IPv6 fields			Yes	
DiffServ QoS			Yes	
IEEE 802.1p COS			Yes	
Destination MAC and IP			Yes	
IPv4 and v6 DSCP			Yes	
IPv4 and IPv6 ToS			Yes	
TCP/UDP-based			Yes	
Weighted Round Robin (WRR)			Yes	
Strict priority queue technology			Yes	
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address		Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address, voice packets must have 802.1Q VLAN tag	
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue			
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED			No
Auto-Video VLAN			Yes	
IEEE NETWORK PROTOCOLS				
<ul style="list-style-type: none"> IEEE 802.3 Ethernet IEEE 802.3u 100BASE-T (XS708T/XS716T only) IEEE 802.3ab 1000BASE-T IEEE 802.3an 10Gbps Ethernet Over Copper Twisted Pair Cable IEEE 802.3ae 10-Gigabit Ethernet Over Fiber (10GBASE-LRM) - XS708T/XS716T only IEEE 802.3ae 10-Gigabit Ethernet Over Fiber (10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-LX4) - All models IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX IEEE 802.3x Full-Duplex Flow Control 		<ul style="list-style-type: none"> IEEE 802.1Q VLAN Tagging IEEE 802.3ad Trunking (LACP) IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) IEEE 802.1p Class of Service IEEE 802.1D Spanning Tree (STP) IEEE 802.1s Multiple Spanning Tree (MSTP) IEEE 802.1w Rapid Spanning Tree (RSTP) IEEE 802.1x RADIUS Network Access Control IEEE 802.3az Energy Efficient Ethernet (EEE) 		



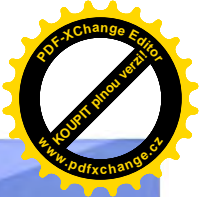
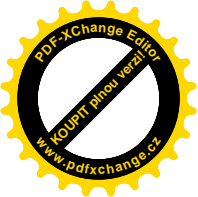
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ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

PRODUCT	XS708T	XS716T	XS728T	XS748T
MANAGEMENT				
Password management			Yes	
Configurable management VLAN			Yes	
Admin access control via RADIUS and TACACS+			Yes	
IPv6 management			Yes	
SNTP client over UDP port 123			Yes	
SNMP v1/v2c			Yes	
SNMP v3 with multiple IP addresses			Yes	
RMON group 1,2,3,9			Yes	
Port mirroring			Yes	
Many-to-one port mirroring	8	16	8	8
Web browser-based graphical user interface (GUI)			Yes	
Smart Control Center (SCC) for multi-switch management			Yes	
Dual software (firmware) image			Yes	
Dual configuration file			Yes	
Cable test utility			Yes	
SSL/HTTPS Web-based access (version)	Yes (v3)			Yes (v2)
TLS Web-based access (version)	Yes (v1.0)			Yes (v1.0 ~ v1.2)
File transfers (uploads, downloads)			TFTP / HTTP	
HTTP upload/download (firmware)			Yes	
Syslog (RFC 3164)			Yes	
USB port for firmware and config upload / download			Yes	
LEDS				
Per port			Speed, Link, Activity	
Per device			Power and Fan	
PHYSICAL SPECIFICATIONS				
Dimensions (W x D x H)	440 x 204 x 43 mm (17.3 x 8 x 1.7 in)	440 x 204 x 43 mm (17.3 x 8 x 1.7 in)	440 x 310 x 43 mm (17.3 x 12.2 x 1.7 in)	440 x 310 x 43 mm (17.3 x 12.2 x 1.7 in)
Weight	2.61 kg (5.76 lb)	2.98 kg (6.57 lb)	5.04 kg (11.11 lb)	6.25 kg (13.78 lb)
POWER CONSUMPTION				
Max power (worst case, all ports used, line-rate traffic) (Watts)	49.5 W	96.0 W	134.9 W	262.8 W
Min power (link-down standby) (Watts)	26.3 W	45.3 W	67.8 W	97.6 W
Heat Dissipation (max and min) (BTU/hr)	Max: 169.00 BTU Min: 89.79 BTU	Max: 327.74 BTU Min: 154.65 BTU	Max: 460.55 BTU Min: 231.57 BTU	Max: 897.17 BTU Min: 333.14 BTU
Energy Efficient Ethernet (EEE) IEEE 802.3az			Yes (deactivated by default)	
Power back-off		No	Drops power consumption by 15% to 20% when short copper cables are detected	
Fan	1	2	4	4



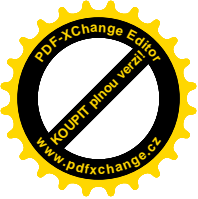
NETGEAR®

ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

PRODUCT	XS708T	XS716T	XS728T	XS748T
ENVIRONMENTAL SPECIFICATIONS				
Operating				
Operating temperature	-5° to 55°C (23° to 131°F)		0° to 50°C (32° to 122°F)	
Humidity (relative)	90% maximum relative humidity (RH), non-condensing			
Altitude	10,000ft (3,000m) maximum			
Storage				
Storage temperature	-10° to 70°C (-14° to 158°F)		-20° to 70°C (-4° to 158°F)	
Humidity (relative)	95% maximum relative humidity, non-condensing			
Altitude	10,000ft (3,000m) maximum			
ELECTROMAGNETIC EMISSIONS AND IMMUNITY				
Certifications				
CE mark, commercial				
FCC Part 15 Class A, VCCI Class A				
Class A EN 55022 (CISPR 22) Class A				
Class A C-Tick				
EN 55024				
CCC				
47 CFR FCC Part 15, Subpart B, Class A				
ICES-003: 2016 Issue 6, Class A				
ANSI C63.4:2014				
IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013				
AN/NZS CISPR 22:2009+A1:2010 CLASS A				
SAFETY				
Certifications				
CB mark, commercial				
CSA certified (CSA 22.2 #950)				
UL listed (UL 1950)/cUL IEC 950/EN 60950				
EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013				
IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013				
AN/NZS 60950.1:2015				
CCC (China Compulsory Certificate)				
WARRANTY AND SUPPORT				
ProSAFE Lifetime Warranty				
			Included, Lifetime*	
Lifetime 24x7 Online Technical Support*				
			Included, Lifetime*	
Lifetime Next-Business-Day (NBD) Replacement				
			Included, Lifetime*	
ProSUPPORT OnCall 24x7, Category 2**	Category 1	Category 2:	Category 3:	Category 4:
Service Packs	PMB0311 (1 yr.) PMB0331 (3 yrs.) PMB0351 (5 yrs.)	PMB0312 (1 yr.) PMB0332 (3 yrs.) PMB0352 (5 yrs.)	PMB0313 (1 yr.) PMB0333 (3 yrs.) PMB0353 (5 yrs.)	PMB0314 (1 yr.) PMB0334 (3 yrs.) PMB0354 (5 yrs.)



NETGEAR®

ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS708T, XS716T, XS728T, XS748T

Ordering Information

PACKAGE CONTENT

All Models	ProSAFE® 10-Gigabit Ethernet Smart Managed Switch Power cord (localized to country of sale) Rack-mounting kit Rubber footpads for tabletop installation Quick install guide Resource CD with installation guides, Smart Control Center utility software, MIB files, and links to additional online documentation including the Web browser-based management GUI User Manual and datasheet.
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ORDERING INFORMATION

XS708T-100NES	North America, Latin America and Europe
XS708T-100AJS	Asia Pacific and Australia
XS708T-100PRS	China
XS708T-100INS	India
XS716T-100NES	North America, Latin America and Europe
XS716T-100AJS	Asia Pacific and Australia
XS716T-100PRS	China
XS716T-100INS	India
XS728T-100NES	North America, Latin America and Europe
XS728T-100AJS	Asia Pacific and Australia
XS728T-100PRS	China
XS728T-100INS	India
XS748T-100NES	North America, Latin America and Europe
XS748T-100AJS	Asia Pacific and Australia

OPTIONAL MODULES AND ACCESSORIES

AXM761-10000S	SFP+ Transceiver 10GBASE-SR (Short range, multimode)
AXM762-10000S	SFP+ Transceiver 10GBASE-LR (Long range, single mode)
AXM763-10000S	SFP+ Transceiver 10GBASE-LRM (Long range, multimode) - XS708T/XS716T only
AXM764-10000S	SFP+ Transceiver 10GBASE-LR Lite (Long range lite, single mode)
AGM731F-10000S	SFP Transceiver 1000BASE-SX (Short range, multimode)
AGM732F-10000S	SFP Transceiver 1000BASE-LX (Long range, single mode)
AGM734-10000S	SFP Transceiver 1000BASE-T Copper RJ45 GBIC
AXC761-10000S	SFP+ DAC CABLE (1m)
AXC763-10000S	SFP+ DAC CABLE (3m)

* This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and modifications to product may void the warranty; covers hardware, fans, and internal power supplies - not software or external power supplies; see <http://www.netgear.com/about/warranty/> for details. Lifetime technical support includes basic phone support for 90 days from purchase date and lifetime online chat support when purchased from a NETGEAR authorized reseller.

** The NETGEAR OnCall 24x7 contract provides unlimited phone and email technical support for your networking product. For ProSAFE products purchased prior to 06/2014, also includes next business-day hardware replacement.

* NETGEAR #1 in Fixed Web(Smart)-Managed Worldwide Market Share according to IHS Infonetics Ethernet Switches Market Share and Forecast, 1Q15 Edition, June 2015

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